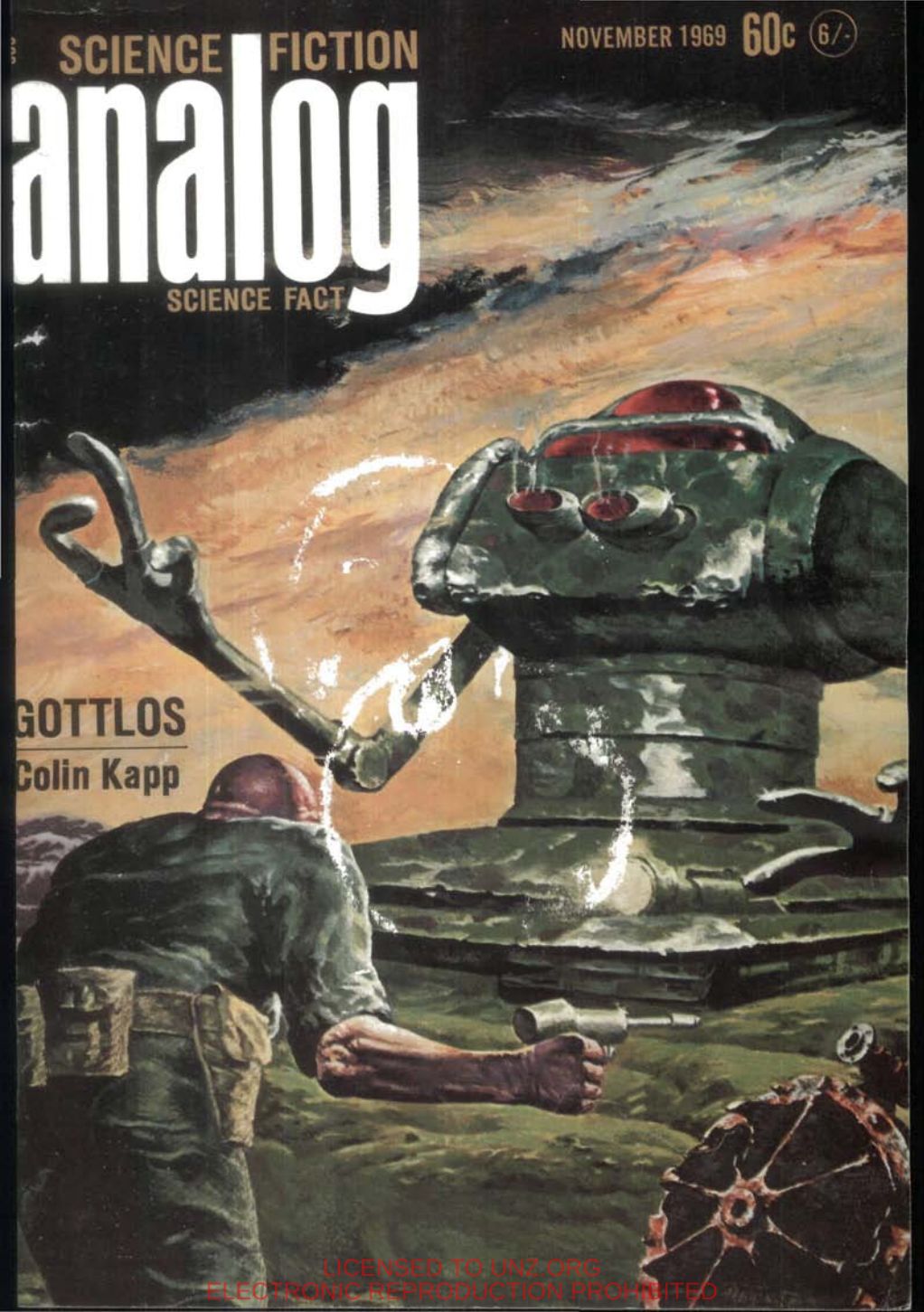

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A. They are the new U.S. Savings Notes – a companion product to the Series E Savings Bond.

Q. Who may buy Freedom Shares?

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Q. What is the interest rate on Freedom Shares?

A. 4.74% compounded semiannually, when held to maturity of 4½ years. The rate is less if redeemed prior to maturity; and they may not be redeemed for at least one year.

Q. Does this same rate now apply to E Bonds?

A. No. E Bonds continue to return an average of 4.15% when held to their seven-year maturity.

Q. What do Freedom Shares cost?

A. They are issued in face amounts of $25, $50, $75, and $100. Purchase prices are $20.25, $40.50, $60.75, and $81.00.

Q. Can Freedom Shares be bought by themselves?

A. No. They must be bought in conjunction with E Bonds of the same or larger face amounts.

Q. Can I buy as many Freedom Shares as I want, as long as I buy E bonds of the same or larger amounts?

A. No. On Payroll Savings, Freedom Share deductions are limited to $20.25 per weekly pay period, $40.50 per bi-weekly or semimonthly pay period, $81.00 per monthly pay period. On Bond-a-Month, the limit on Freedom Share deductions is $81.00 per month.

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JOHN W. CAMPBELL
Editor
KAY TARRANT
Assistant Editor
HERBERT S. STOLTZ
Art Director
ROBERT E. PARK
Business Manager &
Advertising Manager

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7/20/69

AN EDITORIAL BY JOHN W. CAMPBELL

The first time I watched the Trooping of the Guards at Buckingham Palace, on one of London's rare brilliantly sunny days, it impressed me that the British did things *right.*

As long as a people's taxes must support a military establishment—and that's been necessary since men started being something better organized than wandering primitive families—the government should at least give them a show for their tax money. And the Trooping of the Guard in their brilliant scarlet uniforms, their tiger skins, their kilts, their tall, black bearskin hats, with polished steel breastplates, and shining gold and silver decorations, great silver buckles—man, it was a *show!* If I'd been a British taxpayer, I'd have felt that we at least got something for our money!

The contrast with the American dull uniforms, with little or no sense of history, was startling.

I have just finished watching the greatest show ever staged; if absolutely nothing else ever came of it, that magnificent science-fiction movie, filmed on location on the Moon, was well worth the $1.75 price of admission that it cost each American. (I understand the Apollo 11 cost about $350 million; that works out to $1.75 or so for 200,000,000 Americans.) Just as pure, sheer greatest-film-ever-made, it would rank as a resounding success, well worth it's budget. Since best estimates indicate that something on the order of 500 to 750 million human beings, all over the Earth except in Russia, China, and North Korea and North Vietnam watched that drama—it was worth the price!

And that, be it noted, is counting solely the entertainment value of the Great Show; it leaves out the value of the sense of human kinship it inspired around the world. The only way a Japanese, a Malaysian, a Hindu, a Pakistani, Israeli and Arab, a Nigerian and Biafran could share in the sense of immense achievement was to acknowledge *humanness,* the identity as a Terrestrian Homo sapiens, and lay aside the national or racial identity.

When *Eagle* settled down to become Tranquility Base, an immense milestone in human progress had been forever embedded in history. There's considerable sense of fulfillment for someone who, like myself, has been discussing, considering, imagining and visualizing this event for some forty years. (I

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wrote two science-fiction stories in July, 1929, between sessions at summer school.)

The immense technical achievement that Apollo 11 represents is obvious—it roared forth from Kennedy, thundered into the skies, and no one within miles could overlook it.

Less obvious, because less noisy, smaller, and less unfamiliar was the tremendous electronic achievement of the color television broadcasts from "our mobile studio, now 220,000 miles from Earth," that made possible clear, sharp, colorful images of the astronauts, the interior of the LEM and the Command Capsule, and the walls decorated with dials and switches. Those highly complex electronic signals were bringing back an incredible amount of detailed data, from a light-weight little camera, running on batteries, using a mouse-power transmitter.

In none of our science-fiction stories of the first trips to the Moon did we even imagine that the activities of the first men on the Moon would be fully televised for a world-wide audience—that the first human foot set on the Moon would do so on-camera.

The picture quality left something to be desired—but science-fictioneers had long since discussed the glaringly harsh black-white lighting on the Moon; that was no great surprise. That scene was *not* being filmed in a studio, with highly trained experts balancing the lighting for best effect, and skilled, experienced cameramen manipulating the camera and its complex of controls. The lighting was lousy; using a single light-source, and that at a low angle is, as any photographer can tell you, a sure way to get badly illuminated shots. They'd have fried if they'd landed at noon, Tranquility time; their Portable Life Support Systems had excellent temperature regulation mechanisms—but they weren't *that* powerful!

It just happens that Sol isn't a binary, so filming on location we were stuck with that one-source lighting.

The fact is that the TV coverage of the first men on the Moon is as remarkable an achievement as any other aspect of Apollo 11. For one thing it was, in a very real sense, a go-for-broke operation. If we'd flubbed that Moon-walk, we'd have flubbed for all the world to see. If a man in one of those primitive spacesuits lost his balance and fell, he'd likely be unable to rise without help—and if one of the two had somehow been rendered unconscious, the other would have been forced to leave him. The clumsy suits, the massive life-support systems, and the small barely-large-enough-to-crawl-through hatch would have made it impossible for one man to haul another through that hatch to the only place where the suit could

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be opened, and first-aid given.

As I say—a go-for-broke situation, not only for the individuals on the Moon, but for a nation that invited the whole world in to watch whether we made it, or failed.

The polished performance of a trained acrobat makes his gyrations appear easy; the performance of Armstrong and Aldrin made the Moon-walk look reasonably easy. They are, in fact, both highly trained athletes, large, powerful men in top physical condition, who had been trained in the best (and they're none too good!) simulators available on Earth. They'd been given some experience with the situation of one-sixth weight, plus full mass-inertia manipulation. It was clumsy, of course, but it did give their nervous systems some warning of what to expect.

They had one factor working for them; Earth-trained muscles had more than adequate strength for their entire loading under Lunar gravity—but the important item was that their neuromuscular coordination had evolved in a G-field that demanded six times the speed of reaction. On Earth, if you start to tip, your nerves must detect it, your computer work out the magnitude and direction, and send the necessary orders to the right muscles, which have to react *fast* if you're to stay upright.

I watched with fascination the swing of some item of rope-suspended equipment on Aldrin's suit as he exited from the LEM; it pendulumed back and forth in *sloooo-oow* motion.

The perfection with which those trained athletes managed themselves and their equipment in Lunar gravity didn't give a fair indication of what a feat it was!

Their walking had a strangely familiar appearance—the slow, long paces, the kangaroo hops—those have been things we've visualized a thousand times in our stories—so much so that it seemed positively familiar.

It added to my feeling that this whole thing was a rather primitive science-fiction movie—poorly photographed on old-fashioned high-contrast black-and-white film, and with too much unexplained and seemingly pointless action. We're used to such slick lighting, and efficient choreography and editing in our movies, that the real thing seemed pretty artificial!

One of the remarkable situations that came up was, of course, the question of the LEM's location. When the laser-reflector experiment was deployed, the West Coast observatory very quickly reported getting response from the reflectors. That meant that the exact location of the LEM was known with remarkable accuracy; repeated runs of the experiment will locate that reflector within about 6 inches. So that actually, at that point, the location of the LEM was known with

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immense accuracy; what wasn't known was the location of the Moon!

The laser reflector signaled its exact location *with respect to the Earth observatory*. It didn't tell 'em a thing *with respect to the rest of the Moon.*

It's one time when a guy could have said, "Oh, I know where I am all right; the question is, where's the rest of this planet?"

The reactions on Earth naturally interested me—and annoyed me, too. The usual "I want mine!" people were objecting—and their objections were rather thoroughly stupid and, as usual, very inadequately thought out. Typical, was one comment that "that money should have been spent giving people here on Earth jobs."

Look now . . . did that guy maybe think the Brownies or the Gnomes and Fairies built Apollo 11, huh? Or that we imported workers from Erewhon for the job, and sent them home again?

The cost of Apollo 11 is the cost of the human labor involved in mining the ores, refining the metals, synthesizing the plastics, machining, designing, computing—the human labor cost. And some yahoo says the "money should have been spent giving people here on Earth jobs." That I consider a magnificent non sequitor non-thought.

I loved the remark Sir Bernard Lovell, the British astronomer of Jodrell Bank made; he simply pointed out that all this hoorah about "it's a waste of money!" was nonsense—the Apollo program cost only one third of the U.S. annual bill for cigarettes and tobacco, and about one-sixth of the liquor bill.

If you want some extra expendable wealth—there's a fine place to take it from. If you don't want to —O.K., but have the grace to recognize what you're *really* concerned with. And that, obviously, is "Don't inconvenience me by taking away my unnecessary (and nonhealthy) luxuries; take away those things that make for breakthroughs and human achievement! We've never had them, so we won't miss them."

One last comment along that line. The idea that any possible campaign can eliminate poverty is an unsane dream; it can *never* be accomplished. It's rendered impossible forever by two simple laws of the Nature of Things, over which control is inherently impossible.

1. Some years back, I pointed out that Franklin Roosevelt's statement that "one third of the nation is ill-housed, ill-clothed and ill-fed," remains true—and always will, because of the machinations of a small group of men. The same group of men have decreed that slightly less than half our children are subnormal in health and mentality. *continued on page 177*

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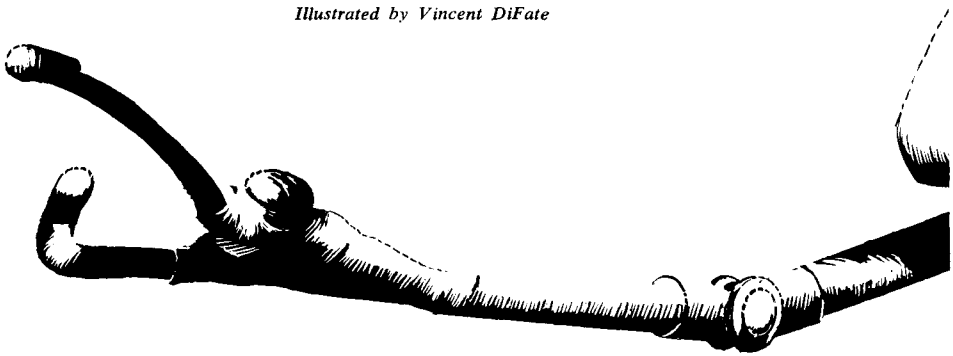
gottlos

The question of what constitutes a human being remains unanswered. But one critical characteristic is human multi-purpose adaptability.

COLIN KAPP

Illustrated by Vincent DiFate



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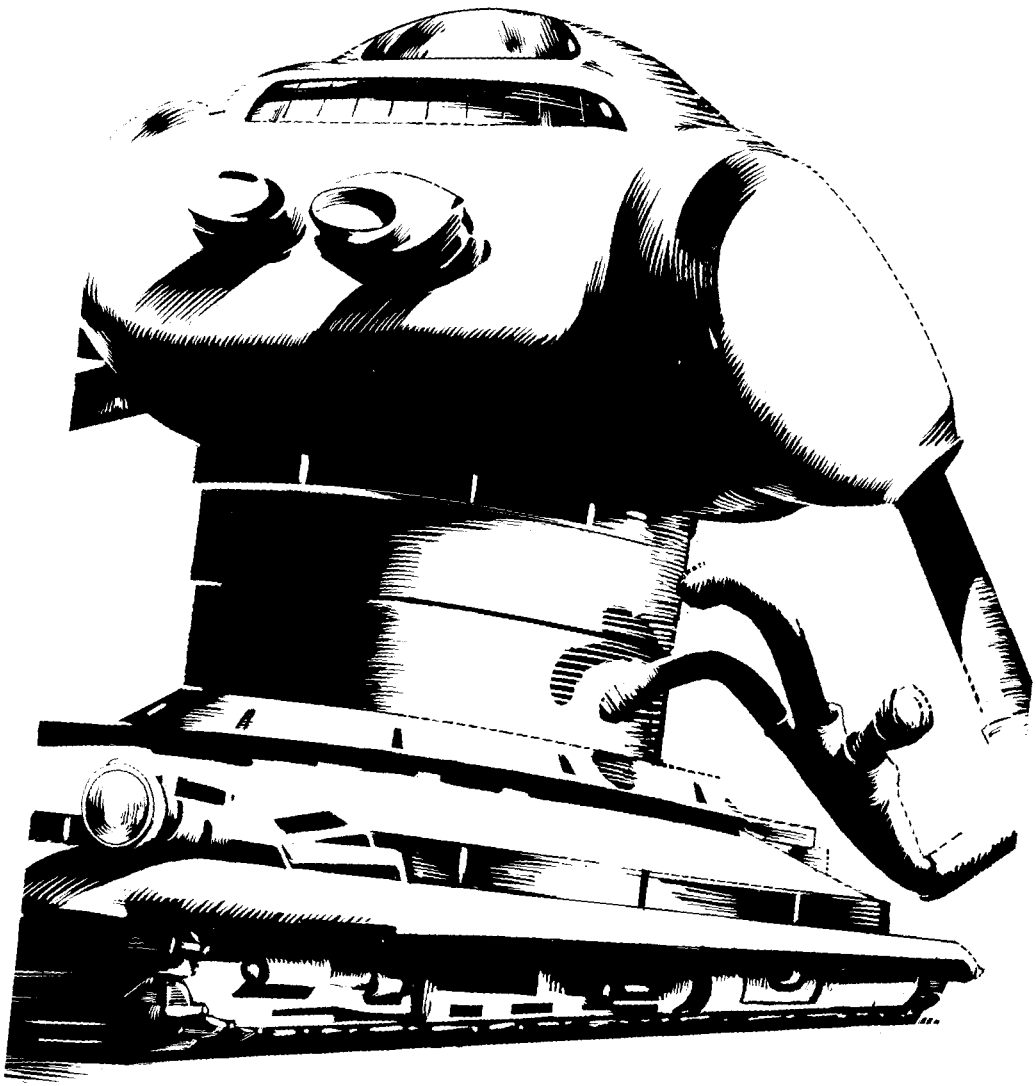

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Almost at once he was through on to firmer ground. He felt a growing confidence then in his ability to succeed. His shell rivaled diamond in its hardness; his power plant, despite its minute size, would not have disgraced a major factory complex; his mechanisms were faultless and proof against corrosives and even a direct hit by armor-piercing rockets—and his capacity to destroy was frightening. Few mechanisms, if any, had ever aggregated one half of his terrible capabilities.

He dropped to the prone position in open country, knowing that his way would be easier the longer he maintained the element of surprise. Beneath him his solid tracks tore great ditches in the earth, as his enormous weight was transported uncomplainingly by the tireless motors. Scanners and sensors forming his "windows" to the outside world, ceaselessly probed the broad ranges of the electromagnetic spectrum, from radio and infrared through visible light into the far ultraviolet and beyond.

The filters sorted and analyzed the signals and passed the digest to his brain for final comment. His other senses, too, were fully alert. He read the size and composition of every particle of metal buried in the mud about his path. He even had a sensor to detect life. Wherever there was life out on the rowen, he could find it. And whatever he found, he could kill.

This was Fiendish, the latest warmec, the total fighting engine. He was the result of the labors of many geniuses working away from the simple imperative: kill or be killed. And he was alone in the closing darkness. Somewhere ahead, up on the ridge, lay an enemy command post from which, according to Intelligence, no less than sixteen *greuelmech* operated—the dreadful squadron of the *Unheilig*. The task set to Fiendish was simple. Regardless of the *Unheilig* or anything, he had to destroy that command post . . . and *everything* that was in it.

Occasionally he stopped, the better to hear the ambient sounds over the whisper of his own superb motors. With the gain in audio amplification at his command he could detect quite readily the soft slop of the mud closing into the channels his own tracks had forced. He could even hear the high-pitched chittering of carrion rats busy at the scene of some recent carnage. A fine rain was falling almost imperceptibly on his shell, but he was glad of this because it kept his optics free from mud without the split-second interference of wipers. Out on the rowen in the midst of total war, a split second was a long, long time.

Constantly he probed the radio bands, seeking for command signals of the *Unheilig* or the pulse-thrill of a radar scanner watching no-man's-land. But the darkening hill

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was radio silent. Almost as silent as if they had known that Fiendish was coming. Too silent. Nowhere could he detect any evidence of activity on the ridge, but the dictates of experience precluded the inference that the hill was clear. There was an overwhelming chance that a full squadron of the *Unheilig* lay dormant in foxholes and craters across the dark landscape waiting until they were sure of his position.

With meticulous attention to every quantum of information which might signal his detection, he crawled slowly on to the foot of the hill. Now it was becoming too dark to use optical sight for navigation. He switched to image-intensified infrared, although the temperature gradients in the terrain were too low to give him more than an immediate view of his route. The metal detectors cautioned him of a large ferrous mass in the mudbank to his right, and this he carefully avoided, although there was a reasonable certainty that it was nothing more than a shattered personnel carrier. As he reached the upward gradient he again stopped and scanned his environment. He detected nothing other than the falling silk of rain and the slight trace of resurrected sunset in the infrared detector.

His mind became seeded with doubt. It was almost beyond possibility that a functioning enemy could have concealed themselves so completely, or that such a bulk as his should have remained undetected and unattacked for so long. It was just conceivable that the command post had been abandoned, and the men and *Unheilig* withdrawn to some other location. However, in this sort of war, it was the unlikely which was ever the most dangerous. He chose to proceed as though under surveillance, while carrying the inner conviction that he was alone on the whole dark hill. Thus detection, when it came, arrived in the most shattering and unexpected manner.

His detectors warned him of nothing, but the plastic mine, deep buried and responsive only to his or some similar weight, was easily powerful enough to dispose of any ordinary warmec. The blaze of pressure and energy released around him jammed all his senses and threw him bodily into the air. In his overloaded and dazed condition he remembered noting only the curious fact that the explosion radiated deeply into the radio spectrum. Then he fell cornerwise to the ground almost ten meters from the point of the explosion.

Choking the screams of alarm and reaction from his brain, he ran a rapid series of checks on his condition, amazed to learn that virtually none of his functions had been affected. The men who had built him had worked with the whip of terror behind them. They had proven their desperation far better

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than they knew. The warmec was undamaged save for the inertial guidance system, and this he did not strictly need while he had other senses working.

Then the enemy revealed their hand. Fiendish drew his bulk away from the crater and into cover of a low bank which would give him cover below the radar skyline. Now his detectors and sensors met activity on several fronts. Two radar scanners on the ridge thrilled their pulses low across the terrain, their transmitters appearing to him as bright points of light on the unified spectrum display. Several other transmitters higher up the hill began putting out pulse-code-modulated signals with the undoubted signature of *Unheilig* command beams.

Behind him and on both sides he began to hear the weep and whir of the dreaded rewakened *greuelmech, Unheilig* dragging themselves from mud pool and shell hole, unwillingly forcing their unwarmed machinery of death to search the area of the explosion. By reason of previous experience they would expect to find a blasted warmec at the site. When they found nothing they would disperse for a patterned search of the area. On any other sort of mission Fiendish would have attempted to separate and destroy them, relying on his superior armor, greater firepower and unbeatable strength. On this trip, however, he had to turn reluctantly away and concentrate on getting as close as possible to his target before the telltale radar verified that he was still active.

One of the main complications was that he still had no idea of precisely where his target lay. True he could "see" the bright radiant lobes of the antennae carrying the *Unheilig* command signals, but it was unreasonable to suppose that these were situated near the command post. More probably the transmitting elements were mere loops of wire strung between stumps of trees. The real heart of the operation would be somewhere else. The displacement of the two radar scanners suggested that whatever needed protection lay in the area between them, but in a game where sharp wits could mean the difference between survival and death, nothing was certain.

He wished now he had called for air cover. Beyond the sheltering bank almost every move he made would be above the radar skyline. Concealment of his presence beyond this point was impossible. If there lay at the command post whatever it was that Intelligence suggested had been delivered, then once his existence had been confirmed all hell would be loosed upon him.

With decisive tracks biting deep into the damaged soil, he went up the bank and over the top.

The reaction was immediate. On

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the brow of the hill a new chain of command signals called out still dormant *Unheilig* from their cold graves of clay. The concentration of signals lit the terrain with such an intensity of radiation that he found it preferable to abandon infrared vision and navigate by scattered radiation well into the VHF band. A line of armor-piercing rockets flared briefly from a bunker, but landed wide, betraying the intervention of fallible human responses in the chain of command. Despite the furious odds, Fiendish's spirits rose. So far all the hazards had been foreseen and allowed for. For this type of situation he had been constructed. As far as he knew he was unbeatable. The prognosis for the success of the operation was running very high.

Concealment was neither possible nor necessary now. In fact, the greater the speed with which he could achieve his objective, the less the complications which could arise. He rose to the upright position, tracks churning the filthy mud yet gaining extra purchase by the concentration of his weight. Behind him *greuelmech* mewed and roared, and laser beams bit into the silicon glassiness of his shoulder. But it was not these behind him that he had to fear. Ahead, an *Unheilig* rose literally from a grave and heaved itself to a defensive position immediately in his path. It carried an armory of destruction such that few machines of war could have stood against it. Fiendish cursed it because its functions were merely a decoy and a delay.

He slammed straight into a bitter attack. Two s.h.e. shells stopped the *Unheilig* in its tracks, while Fiendish's lasers sought and fused the eye cones into ceramic blindness. The *Unheilig* kept on coming, directed by God knows what perception, spraying fire and catalyzed corrosives in a panicked suicide attack. But it was the *Unheilig* who went down. Mazed by fire and by the backscatter of its own sprays, it lost orientation momentarily. Savagely Fiendish's manipulators caught the *Unheilig's* tracks and lifted it upwards. Working by feel, because the fire baffled his optics, he got a thermal lance against the underbelly. Penetration was immediate. The gutted *greuelmech* was tossed from the path like the heap of junk it had become.

Fiendish reveled in a sense of triumph at the encounter. But it was only part of the job. Men could always build new machines, but machines could never build new men. He had to get the men behind the *greuelmech,* the brains behind the *Unheilig.* He had to find out what new thing had been delivered to the command post. Nothing less than this could make the mission a success.

Resistance stiffened then. A rocket projector was bearing more closely, and some of the missiles

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were beginning to hit. While he could take a few direct impacts, there were limits to the endurance of even the magnificent metals from which he was made. He turned from his course, and went after the rocket crew. This was easier than he had anticipated. The ignition flare revealed quite plainly the aperture of the entrenched blockhouse from which the rockets issued. A few well-directed missiles of his own ensured an explosion which effectively destroyed that source of opposition.

By now the remaining *Unheilig* were pressing at his back. Probably ten of the unholy squadron were taking advantage of his detour. They were moving swiftly up the first folds of the hill, each an armed and armored full-mobile destructive engine. To attempt to face them collectively would have been disastrous. He was a match for two or perhaps three *greuelmech,* but not for ten. Fortunately he still had the advantage of greater speed.

He wheeled round and drove furiously towards the dark point on the hill where he hoped lay the entrance to the command post. Almost as a secondary reaction he protected his back with a pattern of s.h.e. impact mines lobbed carefully to ward off an attack from the rear. Even now he was unable to "see" the *greuelmech* who followed, but the auditory evidence was as positive as the situation was becoming hopeless. Unless he could enter the command post and destroy the human operators within, there was no way out for Fiendish.

From somewhere on the ridge a machine gun opened fire, its explosive shells forming a cataract of miniature stars around him. Against his armor the projectiles had virtually no effect. The bright i.r. halo of the gun stood out plainly on the unified spectrum display. Ordinarily he would have delighted in taking the machine gun post by force of manipulators alone. This time no such deviations were allowable. Instead he aligned his laser on the point where he judged the weapon's magazine to be, and was rewarded with a premature explosion which effectively silenced the gun.

So far the mission had gone rather as expected. Behind him one of the dread *Unheilig,* ignoring its metal detectors, had happened on one of his s.h.e. mines. The explosion must surely have disabled the *greuelmech* itself, and left a gap in the pattern of defenses through which other *Unheilig* might follow. When this incident was repeated three times more, he began to realize that the *Unheilig's* controllers had already abandoned discretion and were moving in regardless of the cost. Ignoring the safe route of a detour over their colleagues' shattered bodies, they were coming in directly by the shortest available path. This was indicative of a growing panic amongst the controllers

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in the command post, and a sure indication to Fiendish that he was nearing his goal.

But there had to be a snag. No command post should be this easy to approach, even for an advanced warmec like Fiendish. He increasingly worried over his detectors and sensors, searching for mines, pits, high-tension cable pairs and the rest of the devices which the minds of frightened men dreamed up to protect their skins. He found nothing of note. From somewhere above, a heavy mortar was patterning the hillside with shock explosives, but he was already inside the minimum range at which they dared to let their missiles fall for fear of concussing their own forces in the command blockhouse. Indeed, it was the *Unheilig* themselves, laboring noisily in his tracks, who were most likely to be damaged by the shock-fire.

As yet, for fear of weakening their control of the *Unheilig*, no attempt had been made to jam his control signals. Since he switched frequency channels thirty times a second, over almost the entire spread of the radio spectrum, no jamming could have been usefully employed against him which did not also interefere with the command signals of the creatures on his tail. But he knew that when the situation at the control post became grave enough, the *greuelmech* operators would sacrifice control of their own beasts in order to permit the radio blasts with which they would hope to disorientate Fiendish at the threshold of his prize.

Many a conquering warmec had turned crazily aside within meters of victory, and run in self-destructive circles discharging its expensive armaments at radio-induced chimera. This was the point that Fiendish always dreaded—the electronic insanity which reduced the most marvelous of war mechanisms to a state of cybernetic lunacy. However, he had sufficient confidence in the abilities of the men who made him, to know that a single-mindedness of purpose coupled with a battery of spectrum filters could leave him operating effectively where others of his like would pass into mindless hysteria,

Then his i.r. scan showed him the ground disturbance which was surely the entrance to the underground blockhouse. Hidden between banks of raw, wet clay, it was more conspicuous by the i.r. response of its camouflage materials than it would have been had they left it unconcealed. The scan showed him something else also. Six of the dread *Unheilig*, dormant and scarcely visible against the walls of mud, were stirring into unholy life in a line immediately between himself and the command post entrance. Almost, as if the hands of a single controller, they came straight at him with single-minded spite.

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A withering blast of explosive and laser fire shattered the terrain around him, like the opening of a trapdoor into hell. The force of a s.h.e. projectile exploding directly under his belly threw him upwards and on to his back. The armaments on his underside were nearly as formidible as those on top, but, because of the weight penalty, his underbelly metals were nowhere nearly as thick, or as hard, as his shell. Thus he was more vulnerable on his back. It was now that he began to appreciate the power of his motors. With a single burst of energy he threw his whole bulk straight at a vertical mud wall. His clawing tracks skidded and refused to catch at first, then bit deep as the clay compacted. Reluctantly, and then with increasing velocity he ran himself upright against the wall. With a sudden transfer of counterweights he toppled over and back rightside up and almost into the middle of his aggressors. Then he blasted away with every weapon that he had, blindly, intent only on surrounding himself with a crucifying circle of destructive violence.

Whether this tactic alone could have saved him, he never knew. The murderous fire-hail from the *Unheilig* was disastrously corroding away his external sensors and making complete nonsense of the impressions he received. His only comfort was that the crossfire must be doing more damage to the *Unheilig* than to himself. When his i.r. scanners went out, he was effectively blind because his visual senses were worse than useless in the erratic fire blazing back from the damp clayscape. Knowing himself still to be orientated towards the target he switched to low gear and, regardless of the punishment his shell was taking, he drove wildly ahead. A metal bulk hit him in head-on collision, and was thrown aside by the combined force of manipulators and heedless track motors.

Then the pattern of attack changed suddenly. His radio screens were assaulted by a blaze of transmissions, and, as if to compensate, the blistering attack by the *Unheilig* lost momentum and became wild and erratic. Despite the pulse-coded instructions and frequency-switching techniques used to safeguard the *Unheilig* against radio interference, a smashing radio blanket, such as was now being impressed over the area, rendered the *greuelmech* all but helpless. Loss of control of the *Unheilig* was the price the enemy must pay if Fiendish's own command signals were to be negated. Above all they must protect the men in the command post. One could always build or repair war machines—but battle-trained men were becoming somewhat rare.

Hastily Fiendish disengaged himself, checked his sensors and put out auxiliaries where he could. He was blind in the v.h.f. and infrared

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bands, and hamperingly monocular over most of the remaining radio spectrum. Surprisingly he still had good response in the visible spectrum, though there was little light with which to use it. Experimentally he checked his control and transport systems. He suspected his shell was cracked, and a journal on one of his track-drive mechanisms was seriously overheating. Nevertheless he was functioning and still had sufficient venom in his armaments to deal with any merely human enemy.

Functioning? The blasts of radio noise almost robbed him of control. The unified-spectrum display was a blizzard of interference, with very little coherent information visible. His command signals were likewise blurred and lacking in fidelity. That he was able to function at all was purely because his commands, unlike those of the *Unheilig,* came from three different sources and had error-eliminating features which could survive even a white-noise jamming barrage spread over the entire radio bands. The co-incidence detectors, filters, and anticipatory circuits gave him sufficient orientation to continue purposefully under radio conditions which would have destroyed the effectiveness of any other war machine in action.

But on its own unique display a new signal claimed his attention. The life-detectors were flaring bright, and he knew beyond doubt that his quarry lay not many dozens of meters away from him behind the mud and concrete walls of the command post. Fiendish moved. He covered the remainder of the distance at almost record speed. Interference from the *Unheilig* was now absent, the creatures having been abandoned to fall back into the ooze from which they had so dangerously risen.

Then he was at the blockhouse entrance—a green steel door set in a wet, clayed slab that reason told him was concrete. For the first time he allowed himself the luxury of a headlight the better to judge the distance and direction and force he would have to use. Metaphorically he put down his head, and blasting ahead with rapid bursts of s.h.e. shells, he drove towards the door.

The whole hillside must have shaken with the impact. Even Fiendish was surprised by the strength of the structure which he had attacked. He had expected to find re-inforced concrete. Instead, the structure was pre-stressed in some new and better way. Somehow he fought his way through it, but he knew he would never be the same warmec again. Inside, falling slabs of concrete from the inner partitions fell with dull chimes on his cracked shell as he clawed furiously to draw his bulk through the cascading rubble. Beyond the second wall was a cavity, and in this cavity—were men. The life detector flared clear . . .

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But a new factor gave him cause to be wary. The sudden attenuation of his command signals cautioned him to the fact that the walls of the underground blockhouse were not only thick but radio shielded. He switched to maser amplification, but only by making full use of the co-incidence seeking circuits, could he discriminate intelligence from the radio noise which flooded his receivers. Under normal circumstances he would have abandoned the project at this point, but the imperative nature of the mission forbade retreat. Intelligence had suggested that there was some mystery at this command post, which had to be resolved. He went on, but slowly and with very low precision.

The operators in the cavity were screaming, falling back out of his path. One, in a puny gesture of defiance, had a machine gun on the floor, firing as though its leaden bursts had a hope of stopping a warmec. Fiendish screwed up the gun with a single manipulator, and used the wreckage to cut the man in two. Then he looked around. The control consoles of the *greuel-mech* were familiar to him. Their disposal was easy. He merely rode one of his tracks up the end of the nearest console and kept going. The crushing of the metal cabinets and the electrified disintegration of the equipment therein was as music to his dim receptors.

He put a solitary shell into the radio bank and rode across the shattered control installation with magnificent contempt, searching for the mysterious something which he had been sent to find. Before him, as he clawed and smashed his way round the cavity, a group of frightened operators retreated from his path, occasionally firing hand weapons at what they hoped were his strategic points. The shells did no more damage than if they had been flies. Fiendish knew that he would finally have to kill the humans. This was total war, and total war can only be won by total annihilation of the enemy. But there was yet a faint hope that they would reveal the nature of whatever it was he had come here to find—if only he thought, he allowed them time enough to call it into action.

A second shell into a side gallery was responsible for a reduction in the level of radio interference. His screens cleared a little, and now he could easily distinguish the sweaty, gray faces of the men who fled before him. He could have dispatched any or all of them at any time with the weapons still at his command, but, as with any war machine, he enjoyed the game of cat and mouse before the end. Men were for dismantling with manipulators, a prize for the machine. For what other reason had war machines been invented, had they not been intended to demonstrate their complete superiority over Man?

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Satisfied at last that the installation would be no use to anyone in any sort of war, Fiendish turned his attention to looking for the enigma which had caused him to penetrate so far in the first place. He found nothing. Either Intelligence had been misinformed, or the new turning point in total war had been hidden more carefully than he would have believed. He turned back to the humans. He had patterned his movements so that few, if any, would have the opportunity to escape through the ruined entrance.

Now the captives stood in a huddled group, trapped against a blank wall and standing in the ruins of their own equipment. He switched on a second searchlight in order to see their faces more clearly. If they had a superweapon, their faces showed remarkably little comfort from the knowledge of it. He had seldom seen the certainty of death more clearly written.

This was where he made his mistake. With his auditory and visual sensors trained forward, he completely missed the sound and scenes which should have warned him of the ghastly nemesis which had wakened at his rear. His first indication of danger came when a wall behind him crumbled under some sudden force and scattered fractured concrete and latrine pails across the floor. He turned suddenly, fearing that the blockhouse was beginning to collapse. It was not, but from beyond the wall a new sort of *greuelmech* ground the rubble to powder as it climbed towards him. Unlike the *Unheilig*, this war machine was big—fully as big as himself—with the black sheen of oiled steel. From its purposeful and precise approach it was obviously completely untroubled by the ambient level of radio interference or by radio attenuation. Its movements were uncannily smooth considering the fantastic power it undoubtedly must be applying to its motors.

Despite his previous confidence, Fiendish felt himself suddenly outclassed. An *Unheilig* he could have dismantled quite easily, assuming it was also suffering from the same interference and attenuation of command signals. But there was something impressively sinister and immaculately controlled about the dark machine which had now entered the battle. Fiendish forgot about the men and began warily to prepare for attack. It was a classical situation. Amongst war machines in single combat, weaponry was seldom used. Apart from lasers, against which each would have some degree of shielding, there were few weapons not having at close quarters as much effect on the aggressor as on the recipient. Therefore, it was manipulators, and a trial of strength and cunning which would decide the battle. A thermal lance would be used to administer the *coup de grace*.

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Fiendish retreated slowly from the stranger, noting that neither had the advantage of particular ground or cover. If the stranger had any advantage at all at this point it was mainly psychological. But the stranger had his own ideas on how to conduct the battle. With incredible precision a laser picked out one of Fiendish's "eyes," while a second one bore a hole where his i.r. detector had been. Fiendish was thus reduced to monocular vision in the visual range, which must upset his judgment of distance. A third blaze of laser light shorted the flush termination of one of Fiendish's command antennae, further weakening the co-ordination of the warmec's responses.

Fiendish, thrown by the accuracy and unexpected mode of the attack, threw a couple of shells at the stranger, which damaged nothing but the hearing of the humans in the cavity. Then he closed swiftly, knowing that with his poorly co-ordinated responses he would be best advised to win quickly if he expected to win at all.

But again the results were not as expected. The stranger used a thermal lance, not at the underbelly as usual, but on one of the warmec's tracks. The track fused solid on to the bearing wheel, and Fiendish's forward movement was converted into a sudden circular slew with no possible control of his own mobility. Knowing the battle now to be lost, he released everything in his armory at the fastest rate at which the mechanisms would work, and regardless of target or direction. He waited with a solitary "eye" for the dust and detritus to clear to see what its effect had been.

The command post was totally destroyed. The weight of the hillside had overcome the ability of the shattered walls and pillars to resist it. The end of the cavity where the men had been was completely crushed and buried. Only here, where the two machines stood faced in battle, had the huge concrete roof beams held against the rubble and resisted the imperious weight above.

As if to add insult to injury, the *greuelmech* was unscathed. The bursts of flame and shock-fire which Fiendish had unleashed had troubled it not at all. Fiendish could have sworn that the horror was not even dusty. It was closing for the kill, not only with thermal lances, but also with lasers and manipulators. Fiendish tried to move, but his second track, bisected, incongruously fell off on to the floor. Immobilized, Fiendish raised his remaining thermal lance, pressed it to the *greuelmech's* belly and fired. Then helplessly he watched the lance crumple as the unhindered horror closed to dismantling distance.

The creature was thorough. With a burst of output from its own radio transmitters, it effectively de-

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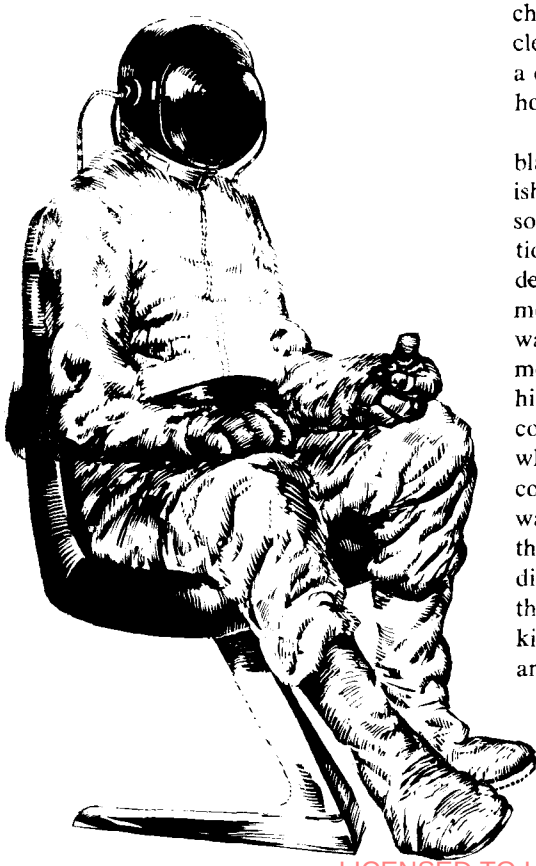
stroyed Fiendish's power to resist. Every time the warmec raised its manipulators for a grapple encounter, the white noise fogged his response and the trick went to the stranger. The *greuelmech* systematically isolated and destroyed all the warmec's functions except for the solitary visual detector and his command response transmitters. As the farce progressed it became increasingly obvious that the black machine was playing a game with him, leaving him aware and reporting back to his own command chain, yet demonstrating all too clearly that no warmec stood half a chance against this newest of new horrors of mechanical warfare.

With immense dexterity the black machine dismembered Fiendish's manipulators, seeming to find some cold humor in laying the sections of the limbs in exploded order just out of range of the frenzied mechanism. The shock to Fiendish was almost physical. The detachment of each metal joint struck him with dumb horror. Had the cold steel acquired nerves with which to feel pain, his distress could have been no greater. But it was not only the dismantling, but the method by which he was being dismantled, which was the difficult thing to face. War machines were killer engines, tough, venomous, and with little use for finesse. There



MANTON

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was a limit to the number of "bits" of information which a command signal could carry at any practical frequency, and these had to be shared amongst all the operating mechanisms. Yet the *greuelmech* was tackling Fiendish with the patient precision of a skilled mechanic. That precision alone could have demanded a transmission bandwidth greater than most machines demanded for their entire operation.

Soon Fiendish was completely immobile and disarmed save for his solitary "eye." Then the housing of even this was deftly unscrewed. The last instant of vision which the instrument produced was the sight of the dark *greuelmech's* underbelly, across which was stenciled:

GOTTLOS

There was only one action of which Fiendish was still capable. His power plant was a controlled reactor. It also had the facility of becoming a very effective bomb.

MANTON

This was it again. The terrifying feeling of re-birth . . . the splitting of the womb . . . the unfaceable separation of the weaker from the stronger. Exposure of a psyche to a world it knew it could never master, never contain.

"Manton, pull yourself round!"

Even the pupa has the consolation of emerging as a butterfly . . . able to fly away from it all . . .

"Manton!" A hand, cold, bony, smote his face. Rohm's hand. Rohm's temperament. Clinical. Efficient but never kind. *Whatever happened to kindness?*

Manton opened his eyes. Major Rohm was standing over him, face full of something which might have been concern but probably was not.

"Sit still for a minute. I'll get you something to drink. You look like hell."

"I lost Fiendish," said Manton slowly, when he had been able to convince himself that the tongue he found in his mouth was his own.

"I know. We were watching on the monitors. I thought we were going to lose you, too. You got too deeply identified. When Fiendish got dismantled, you got dismantled. One day when you get too far over that edge you're going to stay over. You know that, don't you?"

"Yes, I know it." *As if it mattered.*

Manton accepted the drink. By an unspoken convention he ignored the bitter aromatics which Rohm had scarcely bothered to disguise with coffee. His head felt cold now that the helmet had been removed. As objectivity flooded back, he became more aware of the lights which flooded the equipment trailer and of the complex of screens and monitors before which he had sat in empathic radio communication with five tons of nuclear propelled murder machinery called Fiendish. Even now he wondered

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if Rohm truly understood the strength of that empathy—the subjective mind of the gestalt of man-plus-warmec, which had gone out into battle connected by the most tenuous strings of radio communication.

The warmec had been a carefully constructed device of war, but mindless. Manton had provided the mind which had made the decisions and directed the end results. But the union of the two had been a different organism, surpassing vastly the normal casual integration of man and machine. Fiendish had been the gestalt of the two entities, and both had suffered adversity equally. The body of the warmec had ceased to exist in that final explosion, but its psyche still lived on. That part was Manton. The rest of him was dead. Even now the black fringes seemed to linger round the edges of his brain.

He discovered Lucan sitting at the far end of the trailer, screened by lights, fussing around his films and videotapes. Lucan would be able to produce a perfect record of every event of the trip. The great god of Intelligence would digest it all, trying to find out what the demon *Gottlos* was. *Which is funny, because they don't even comprehend what Fiendish was. Not really.*

Lucan finished securing his tapes, and came over with a notepad. His face was grave. The garish fluorescents made him seem even older and balder than before. Somewhere on his uniform, under the encrusted mud and the patches where skin grease had worked its way through the material, was the insignia of his rank—which was very high. *Curious thing about being out on the rowen—rank doesn't matter much. The only thing important is the ability to maintain a whole skin. Lucan's not only got a whole skin, but he's managed to age inside it. Not many of us will do that. That's why Lucan's age counts for more than his rank. I've a lot of time for Lucan.*

Lucan glanced questioningly at Rohm, and Rohm spoke. "You can have him, but make it brief. He's just lost his best friend out there, and I'm going to have to treat him for shock." No sympathy in the voice, just irony.

Pulling a wry face, Lucan sat down. "Listen, Manton, it's important that we get your impressions of this *Gottlos* creature while it's still fresh in your mind."

"You know I lost Fiendish?"

"That was a foregone conclusion. Very few warmecs could have got in there at all. Certainly none could have got out again."

"I'd have got out—but for *Gottlos.*"

"What struck you about *Gottlos* most?"

"The way he moved—complete co-ordination. Not a gram of energy wasted. The command signals must have taken a hell of a bandwidth."

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Lucan made angry hieroglyphics on his pad. "We didn't detect any further command signals after the *Unheilig* signals failed. Did you manage to sample any?"

"No, but I was becoming increasingly radio blind. They could have been on a frequency blindspot."

"Possible. But, with frequency switching over the range you were using for command, I'd have thought something would have shown up."

"There was still blanket-jamming coming in from outside. I doubt if I'd have noticed."

"Very well!" Lucan chewed the end of his pen. "We'll try another angle. Why do you think *Gottlos's* operator waited so long before he joined the battle?"

"I wondered that myself. The damage was done before he intervened, and even then his intrusion probably caused more damage than it saved. Either way they'd have lost both the installation and the crew. That's what gave me a curious thought."

"Let's have it—it might be important."

"It's stupid, I know, but it occurred to me that it was just a piece of sheer bravado. All he wanted was to prove how easily he could beat Fiendish."

Lucan's raised eyebrow was directed towards Rohm. A shake of Rohm's head indicated that Manton could scarcely be regarded as being fully rational. Manton did not care. He still had his own ghosts to contend with.

"Did you gain any idea," asked Lucan, "of where *Gottlos*'s command might be situated, or how those commands were sent?"

"No. The post was destroyed as an installation, and it's very doubtful that an operator could still have been functioning from inside. The whole hillside was giving way."

"Then the commands must necessarily be from outside?"

"If so, it would need a new technology. That place was radio shielded to such a degree that I had to use maser amplification to pick up any intelligence at all. And even when I'd shot-up the transmitters there was still a pretty fair radio blanket from elsewheres. That doesn't make it impossible for *Gottlos* to receive effective commands—it just makes it impossible for him to act as effectively as he did."

"You keep saying 'him' instead of 'it'. Why?"

"Because when you're out on the rowen it's 'him' you have to fight. The human operator is an ancillary —a lesser part—something you mop up afterwards if you're lucky enough to get the chance. Call it identification if you like, but the war machines are the *real* creatures of this generation. We've made them an extension of the human brain just as surely as a man's body

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is an extension of his brain. But as you only know a man by the flesh in which he walks, so you know the war machines—not as pieces of equipment but as individuals."

"Thanks for nothing!" Lucan rose to his feet. "I haven't finished with you yet, but I've a lot of data to process." He turned back to Rohm. "I know it's asking a bit much, but I'd like him rather more accessible for the next debriefing. Frankly we've run up against things like *Gottlos* before on other sectors, but Manton's the only person who's ever had close combat experience. It could be vital. Either we find out what makes *Gottlos* tick, or we may lose-out very sadly on this phase of the war. It's the *Unheilig* all over again."

Rohm moved in quickly. A massive dose of something injected intravenously made Manton's forearm hurt, but he knew better than to complain. In this kind of war one was very lucky if one's skin was punctured by nothing more than one of Rohm's needles.

Major Rohm was a woman. Somehow the distinction did not seem to matter now. There had been days of crisp uniforms and protocol—*How long ago was that?*—when so slight a thing as the difference between sexes had seemed important. Viewed from the standpoint of now, the old values seemed facile and absurd. On the rowen the only thing that counted was survival. The wholly natural selection of warfare made sure that the survivors were well qualified. Rohm was a survivor, just as Lucan and he were survivors. At that point all lesser differences ceased.

Manton went to sleep then, hands over his head which had been shaven for the electrode's convenience. Although the air in the trailer was not cold, Manton always felt the nakedness of his skull unless it was pressed into the leathery warmth of his operating helmet. But then, when under the helmet, he was no longer, strictly, Manton.

You're a coward, Manton . . . a moral coward. And that's the worst type of coward to be. You can run away from everything except yourself. It isn't Gottlos *you're afraid of, but the thing that* Gottlos *is that wakes you sweating in the night. Deep down inside, you know what* Gottlos *is . . . but you can't admit it . . . not to Lucan, not to Rohm, barely to yourself even.*

His glass was empty. He looked at it accusingly, as though its emptiness was a deliberate betrayal. It was barely ten o'clock in the morning, and Lucan was not expected until twelve. Rohm would be back before—angry because he had been at the spirits. If he could drink enough, he would not even care about Rohm being angry. Alcohol was a good insulator—or once had been.

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Alcohol's no refuge any more, Manton. And don't you know it! All that happens is you swap one personality for another—like changing dirty shirts. But now you're sick of the stench of stale sweat in both of them. It makes you gag as your head goes past the armholes. Once alcohol was a door through which you could run and hide. Now, boy, when you go through that door there's another you on the other side. . . . He's got problems too! So where you going to run to, Manton?

Kicking the yet unemptied bottle out of sight, he went over to the command complex and sat at the console. His hand strayed towards, but did not touch, the helmet. When alive, the displays before him and the electrodes on his head would give him all the sights, sounds, sensations—every quantum of information gleaned by the warmec in the field. And in return he would give the warmec sense and direction and purpose. He and the machine became a composite whole, a total gestalt. The result of the union was something uniquely greater than the sum of both of them.

Metaphorically he sat in the forehead of the body that carried both of them out into the sick wilderness of the rowen to make fantastic war on other creatures similarly endowed. It was after—when they got through to the men behind the machines—that he and his like proclaimed the uniqueness of the gestalt as a separate entity by the fearsome atrocities they committed on the men.

So how would you feel, Manton, if you were Gottlos? *Invincible? Angry? Alone? Very much alone. Every creature is an island. Ultimately everybody is shut up in the box of their own skulls. But how much more alone it would be to be* Gottlos. *You couldn't face that, could you, Manton? You can't even face the idea of it. So where you going to run to now?*

Insanity? It doesn't work. Remember the psychiatrist? No couch, no blessed unburdening of the soul. Sit on a hard chair while he fills out forms. Might as well have been a post office. He listens. Twenty minutes, glancing at his watch. "You'll have to go now. I've other patients waiting." Just that. No treatment. No prescriptions. You're not sick, Manton, just rational. The fact that rationality is gnawing your guts out, and the tensions make you cringe, is quite irrelevant. No matter how much you crave it, they won't grant you the blessed status of diminished responsibility.

But thank the Lord that you're not Gottlos.

Then he thought of Rohm and the string of letters she had after her name, and he *knew*, quite suddenly, that the difference between himself and *Gottlos* was more one of degree than it was of kind.

When Rohm returned she found

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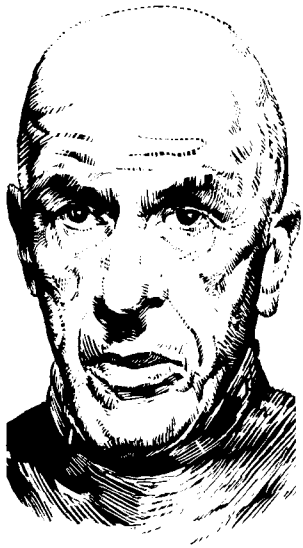

LUCAN

Manton sitting in the chair at the command complex, wearing the unfunctioning helmet and beset by a fit of uncontrollable shivering.

LUCAN

Lucan was worried. Things were beginning to look grave. Impossible as it seemed, the evidence was that something had crawled out of the gashed hillside where Fiendish had been lost. Whether it was the same black war machine which Manton had fought, or another, it was impossible to tell. But *something* had come out, that was for certain. And the unholy aura of resurrection which its emergence proclaimed gave it nearly as much of a psychological advantage as its tactics and weaponry gave it physical invincibility.

It had been over this same dark horizon that the first of the dread *Unheilig* had come. The *Unheilig* had been so superior to any existing war machines that their introduction had nearly swung the balance of the war. They had enhanced their evil reputation by the measure of the atrocities they had wrought on human soldiery discovered in the field. Theirs was a deliberate reign of terror, with a psychological weighting which did much to nullify potentially useful opposition. Not until the introduction of the newer warmecs, such as Fiendish, had it been possible to deflate the *Unheilig* image and bolster the crumbling morale.

Now the conqueror of Fiendish was rampant on the selfsame ground . . . *Gottlos*—Godlost—well named in accordance with the conventions of the grim humor of war.

In the night, two spy posts and a radar watch position had gone out of communication. No messages, no reasons. They had simply ceased transmitting. It could have been equipment failure, but only a fool would think that it was. The patrols had gone out with burial shovels. Probably the patrols would not come back either.

Damn! There had to be some answers somewhere. Lucan sifted again through the pile of reports on

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his desk, particularly those of the radio watch. The only detected *greuelmech* command signals received in the sector had been concerned with an action nearly forty kilometers East. By all reasonable reckoning the hill which had nurtured the *Unheilig* lay dead and dormant. No spark of any radiation had come out of its ravaged soil—yet even now something from across no-man's-land was nibbling at the fringes of their defenses. He had no doubt that something was *Gottlos*.

The fact that *Gottlos* could be made to function without detectable command signals was a phenomenon nearing the limits of known technology. The fact that *Gottlos* could continue to function without emitting detectable response signals was a phenomenon nearing the limits of human credibility. As Manton had pointed out, the co-ordination and precision with which the new *greuelmech* operated would require commands on a very wide bandwidth. Only at extremely high frequencies could that bandwidth be found free—and at such frequencies, communication was virtually limited to line-of-sight operation. And there was nothing out on the rowen which would facilitate a line-of-sight channel. Even a satellite check had drawn a blank.

Another disturbing aspect was Manton himself. Everyone who worked with the operators of advanced war machines became aware of the empathy which existed between the men and the machines of which they effectively became part. Even in the embryo levels of the gestalt, such as vehicle-plus-man, the composite was known to exhibit psychological characteristics impossible to the one and untypical of the other. Warmec-plus-man, with its infinitely tighter coupling between the two components, was the impatient and murderous animal vehicle-plus-man raised to the nth degree. Under these conditions the operator ceased, for the duration of the coupling, to be strictly human in his reactions. He was temporarily an integral part of a mechano-human composite beast which had death and destruction inherent both in its concept and in its design.

Manton was valuable because he was intelligent and objective both as an individual and as the sentient element of a man-mechanical gestalt. He seldom lost a warmec on the rowen, but when he did he frequently underwent a sort of quasi-death, a shock reaction comparable to the experience of a major amputation. But the deliberate dismantling of Fiendish by *Gottlos* was a different thing entirely. Certainly Manton had exhibited a shock reaction, but this time the shock had been deeper, more traumatic; based on a fear which penetrated deep into the psyche. But the peculiarity was this: Manton's

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shock was not the result of losing Fiendish. It was the result of meeting *Gottlos.*

A communications man called Lucan urgently to the radio shack. He went sickly, already knowing what the message would be. He was right. Three patrols, each of seven men, were missing and presumed dead. Dead under the shadow of the hill. Radio communications had suddenly ceased and not one survivor had returned. No reasons, no indication of how. Lucan could guess how. Something with incredible sharpshooting precision had lain in wait for them, discreetly picking-off the radio backpack, probably with a laser, before moving in for the massacre. It was a pattern beautifully following up the psychological advantage gained by the *Unheilig. Gottlos* was very ably waging his own war of nerves.

Lucan cursed the force of circumstance which had left his sector temporarily bereft of even a reconnaissance warmec. Reinforcements were being raced in, but at the moment there was nothing which could be sent out on the rowen except men—and the war had progressed to a stage where men were precariously fragile combatants. In the meantime the destructive capability of the new unknown was successfully bearing down upon the outpost defenses, and its psychological weight was doing equally predictable damage to the morale of the supporting troops.

When he had the mechanisms, the full responsibility for the counter offensive would fall on Manton, whose capabilities in the field had probably never been equaled. In contrast to *greuelmech* operations, which were usually directed by a group of operators, Manton always worked alone, sometimes handling a warmec like Fiendish in successful opposition to half a dozen *Unheilig.* It was difficult for Lucan to reconcile the shaven-headed, pallid little man with the terrifying gestalts which had exploded the myth of the unholy *Unheilig.* But then, when Manton was coupled to his beloved machines he was no longer, strictly, Manton.

By nightfall the situation had deteriorated even more. A second radar watch position had ceased reporting, and the magazine store of a missile post had exploded taking the post and two supply tenders with it. Forty-eight men in twenty-four hours was only an average of two men lost per hour—but they were watchful men in the first line of defense. Behind them lay the longer range equipment, harder hitting at a distance but a softer underbelly when it came to an attack by a war machine. Tomorrow's death roll could easily top five hundred.

At twenty-hundred hours a radar position reported a sighting, but the *greuelmech* apparently detected

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their pulses and found dead ground below the radar skyline. The indicated area was pounded for an hour with shock explosives, then a patrol went out to investigate. Neither the patrol nor the radar position ever reported again. Then thirty men in a bunker were buried alive as something came out of the night and detonated a pattern of s.h.e. mines against the bunker walls. There was nearly a survivor, except that something tore him completely in half as he reached the carrier which could have taken him to safety.

Then nothing. The rest of the night seemed an eternity of nerve-twisting antithesis. Radio watch still reported no activity, no command or response signals. There were no further casualties, no sightings, no indication whatsoever that the war machine responsible for the attacks was still active. When daylight came it would be possible to determine the creature's progress by following its heavy track marks. But in the darkness nobody knew whether it had returned to the hill, whether it lay concealed in some mud-filled crater inside their own lines, or even if it had penetrated many kilometers deep and was now alert to attack them from the rear.

Lucan did not know whether to be relieved or angry when dawn brought an order for all units to be withdrawn back seven kilometers to the limits of the former city from which Fiendish had led their triumphant advance. The tactical prudency of the retreat was readily apparent, but its effect on morale was likely to prove one of the most disastrous blows which the sector had encountered.

Lucan himself led the Intelligence detail which ventured into the first light in a last-moment attempt to define *Gottlos*'s nocturnal movements. Picking up the trail at the ruins of the bunker, they followed its track run through their own lines, amazed to find that so large a machine could have gone unnoticed for so long. It appeared to have followed a purposeful course, deviating from a direct route only to avoid points of possible detection. The indications were that it had some particular mission to perform. It seemed to have had no hesitation about the direction of its destination, and the trail led straight and clearly to a certain point before turning away.

It was the point of its turning which filled Lucan with a chill surprise which verged on nausea. *Gottlos*'s strange journey had taken it to within fifteen meters of the command trailer in which Manton had been sleeping. The depth of the track impressions showed that *Gottlos* must have rested there perhaps for hours before it turned and made back to the general direction of the wastelands underneath the hill. Had *Gottlos* chosen to tear the

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trailer apart it could have done so with impunity. Yet it had passed so silently that even Rohm had received no inkling of its presence.

The forceful contrast between this action and Fiendish's treatment of the command post on the hill gave rise to a long, sick, series of questions to which there seemed no answer. There was no doubt in Lucan's mind that *Gottlos* had sought the trailer deliberately and with a foreknowledge of its location. But why, having reached its objective, had the creature not attacked? Even in the unlikely event of its having expended all its armaments, it could still have destroyed the trailer and its occupants by force of manipulators alone. And why, having come so far and with such a great risk of detection, had it waited nearby so long, rocking in apparent indecision, only futilely to leave again without having performed any useful action.

As soon as all the advance units had been withdrawn safely clear of the previous boundary, a strike force of aircraft moved in and methodically carpeted the whole area of the hill and the intervening land with a close pattern of s.h.e. bombs. The stricken terrain began to assume the pockmarked appearance of a red-brown parody of the surface of the moon. Nowhere was left a trace of the green of grass nor the comforting outline of a tree. In theory *Gottlos* should have perished also. No one was foolish enough to feel any certainty that he had.

Around the former city the radar watch was strengthened considerably. Every available type of armor-piercing rocket dispenser was pressed into service along the perimeter to try to prevent a recurrence of the situation of the night before. Manton's trailer, now being re-fitted with a modified command complex preparatory to receiving a new warmec, was moved well into the city ruins and protected by an almost continuous ring of armaments. There was a horrible incongruity in supplying such an elaborate guard for what was, in effect, a currently nonfunctional command trailer. But there was a reason. Lucan sensed that it was Manton rather than the trailer which had attracted *Gottlos*. Manton could be replaced but never equaled in the bloody game of warfare on the rowen.

Lucan's growing sense of frustration was aggravated by the inability of the radio watch to produce any evidence of *Gottlos*'s command or response signals from the wealth of recorded noise, and by the fact that for the first time in this sector he had absolutely no Intelligence to be intelligent about. The black *greuelmech* had disappeared as completely as if it had never existed. The sole justification for the elaborate defenses being set up was the jittery feeling which inhabited everybody's guts as the sun lay

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long and leaden rays obliquely across the ruined hill.

Having finished his reports, Lucan became unable to bear his own company, and left his command in charge of a subordinate. Outside, the air was fresh and contrasted sharply with the stale stench of poor tobacco and ersatz coffee to which his nose had become accustomed. The only light hung in a few wisps of high cloud still affected by the last fingers of sunset. Somewhere, curiously, a bird trilled among the black and grotesque towers of the dead city. Something inside Lucan prompted him to ask himself if spring were here. Then he remembered the shorn and diseased face of the bombed hill, and knew the question to be metaphorical. Spring was a state of mind—it had nothing to do with calendars and dates.

As he walked he tried, at first without success, to resurrect the image of the city from the outline of its ruins. In no way could he make it come out right. He had never known the city in the days when its walls were whole and when its stark piles had been joined by roofs and had windows and lights and people. Always for him the city had been a place where broken teeth of masonry faced up from ten-thousand brick-choked gullets to an inhospitable and uncaring sky. Indeed, when he had first seen the city he had been glad of its desolation. It had confirmed the crushing power of the offensive might of which he himself had been a part. Only later, when the dreaded *Unheilig* had torn his army apart, had he felt more kinship with his dead enemies than with the gestalt creatures who had taken the war and made it something of their own.

Somehow his imagination could reach no farther back than the days which the city must have endured in the earlier stages of the war. Rationing, restrictions, and everywhere the drab gray uniforms marching unhappily over the granite roadstones which even now hurt his ankles as he walked. As darkness closed, so the ruined portals gradually seemed more secure; and farther back, what had been mere hints of buildings seemed to increase in substance. In places he could almost hear quiet whisperings in doorways, or sense an anxious frown in an upper window.

Then great gaps of utter nothingness showed where reality had crushed complete areas of streets and houses too savagely for any essence to remain, however well attuned the mental eye. Occasionally a new pattern was impressed over the old, where new roads had been bulldozed by expediency contrary to the run of the older ruins. Here the rival claims of "then" and "now" clashed with a noiseless disharmony that was wistful, wanton and futile all in the same breath.

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Ahead had been a plaza. Now its apron of cold flags and its open outlook made it a suitable base for the command trailer and its attendant service vehicles. Although he had been there several times in daylight, Lucan found the dark bulks of equipment confusing, and momentarily halted until he had regained his bearings. Then a sense of wrongness crossed his mind as something struck an unfamiliar chord. The endpoint of a panic series of revisions of potential situations led him to an inescapable conclusion. In fright and panic he became rooted to the spot. Amongst all the dark bulks which should have been, a further one had insinuated itself—one erect—that rocked itself slowly backwards and forwards on its tracks in a mode of apparent indecision. *Gottlos!*

Lucan fought the panic from his brain, and some icy voice of conscience reminded him that he was expendable while Manton was not. Yet an overwhelming tide of self-preservation caused him to choose a relative path between the conflicting pressures. With ice in his veins he moved noiselessly into the shelter of a wall, having no means of knowing whether *Gottlos* had detected him or not. His intention was to steal past the *greuelmech* under cover of the broken walls until he reached a point from where he could reasonably make a dash towards the vicinity of the trailer. There, he reasoned, if he shouted loudly enough and urgently enough he could probably warn Manton before *Gottlos* cut him down.

Silently he moved against the wall, then, finding a gap, he moved along behind it, cursing his heart for pounding so loudly. Centimeter by centimeter he crawled beneath a shattered sill, breathing only through his mouth lest the sharp breath in his nostrils should attract the creature's hyper-acute senses. Then, with only ten meters left to run, he broke cover and howled in a cracked voice which horrified himself: *"Gottlos! Gottlos* is outside!"

The effect was immediate. He heard sounds of movement within and sensed rather than heard the huge machine wheel angrily in his direction. He anticipated a shot in the back, or the quick flick of a laser on the spine. But it was not as he had expected. He reached the trailer steps as the door came open. Rohm's arms pulled him anxiously across the threshold and he tripped and fell untidily on to the floor still shouting his message. Manton had already thrown the opposite door open, and the three of them had made a panic exit from the far side of the trailer before Lucan had time to wonder why a s.h.e. projectile had not made an end of them all.

Meanwhile, Lucan's shouts had not gone unnoticed. Nearby in the guard detail, a siren wailed. The

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area stirred with hastily awakened activity; it was a fair certainty that few, if any, of those aroused comprehended that *Gottlos* was actually in their midst. Most interpreted the disturbance simply as a call to action stations. Not a few actually blundered into *Gottlos* in the darkness, not realizing the tall blackness in their path was one of the most fearsome war machines ever devised.

Surprisingly, *Gottlos* let them go. Its single-minded objective was the trailer. As it moved in, its manipulators flayed one side from the structure, opening it up like a cardboard mockup. Finding it empty, it then appeared to search about for Manton. Such was the scope of its visual assemblies that it soon located its quarry on the far side of the plaza. *Gottlos* moved with the precision of a watch and turned with the speed of a cobra. It cut the trailer in two as it rode straight through with its tracks.

Manton was still trying to accept the nightmare situation which had torn him from his sleep. He had halted near the plaza's edge and was looking back at the metal nemesis with some astonishment and no small amount of fear. But, despite the urgent hands of Rohm and Lucan tugging at his arms, he appeared unwilling to run farther. Lucan was logically a partner to him in this resistance, since they all knew that *Gottlos* had the power if it chose to kill every living thing within a three kilometer radius. As far as sense dictated, he and his colleagues, the guard detail, and half the garrison were already as good as dead. But total war was never a game to be bounded by logic, and all but Manton were caught by an imperative urge to flight.

Manton merely stopped, watching the advancing black enigma as though it were his own tombstone dressed with a different name. There was no doubt that *Gottlos* had seen him, knew him, and was coming directly towards him. Lucan began to fire his short carbine at the *greuelmech* in the pathetic hope of hitting some vital spot. He might as well have spat into the wind as attempted to stop the creature with a hand weapon. Manton seemed more aware of the impact of *Gottlos*'s tracks on the ancient flagstones than he was of the melee around him. Rohm clung on to Manton's shoulder, but he flung her away savagely and remained standing at the corner of the square as if accepting the inevitable in a moment completely divorced from time.

Then, as sometimes happens to the fortunes of war, the unforeseen occurred. It took many moments for the trio to realize the truth of their deliverance, but the mechanism was plain. Somewhere under the plaza an abandoned cellar, unused-to and incapable of resisting the concentrated weight of an erect

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war machine, gave way. Into the crater of falling debris the giant war machine plummeted down and out of sight. The fractures in the masonry spread almost to Manton's fear-locked feet.

The aftermath of the crash and roar of the collapse was a curious antithesis. The sudden silence was punctuated only by cries for enlightenment, and overshadowed by a darkness which nobody dared explore with any form of light. Somewhere below them, how far down there was yet no means of knowing, one of the most destructive devices conceived by man was trapped like a wounded tiger in a pit—and like a wounded tiger it was even more dangerous than before. Because now it had nothing whatever to lose.

ROHM

If one thing had occurred to Rohm more forcibly than any other in the previous seconds of flight and confusion, it was the fact that intellectually Manton had not been afraid of *Gottlos*. At the level of instinctive reaction he had certainly responded, but once the fear of the unknown had been washed by comprehension, Manton had forcibly stopped and calmly waited the approach of his terrible persecutor. It was almost as if Manton somehow believed he was still a steel-shelled warmec and could meet the creature on its own terms. The force with which Manton had flung her away tended to confirm the theory. From the monitors through which she had followed the battles of Fiendish she knew well the casual cuff of manipulators with which war machines would dispatch trivia from their paths.

Nor was Manton alone in the flood of unlikeliness which poured like a torrent over the dark corner of the plaza. The reactions of *Gottlos* were also completely untypical. At any moment since it had emerged from whatever lair in the ruins it had used as cover, it could have destroyed them all utterly. A single s.h.e. projectile could have cleared the plaza and so damaged the guard detail that the creature would have had a fair chance of fighting its way out. But instead, it had chosen to stand and wait. Presumably it had only moved when it did because Lucan had raised the warning. What the far operator of *Gottlos* had in mind when he directed this odd maneuver, Rohm could only speculate; but for the corporeal part of the gestalt which had plunged down into the darkness, the effect had been remarkably suicidal.

Suicide? Her mind caught up the curious idea and played with it. No, not suicide—attempted suicide—the ultimate appeal for help so grievously needed that the body is jeopardized as a desperate token of emphasis. This began to hold a numbing mode of logic when she considered that Manton was one of

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ROHM

the few people in the world sufficiently experienced in the gestalt to recognize the act for what it could be—a cry for help.

Rohm rejected the idea savagely, realizing she had fallen into Manton's habitual trap of regarding war machines as individuals rather than cleverly guided instruments of destruction. Catching Manton's arm she led him away to where Lucan was organizing personnel carriers and busily supervising the evacuation of the area. This time Manton offered no resistance. His face was more than usually pallid and he had withdrawn into his own internal world of thoughts. Under the heavy cloth of his coverall he was shivering violently.

Lucan's office was pungent with the smell of bad tobacco and spent and roasted coffee dregs mixed with the sharp sulfur oxides from the flue of the stove. Althought unhealthy, it was at least warm, and Rohm had an imperative need to separate Manton's physical chill from his psychological one. She pushed Manton into a chair, gave him coffee, and detailed a soldier not to let him stand. Then she fled to the nearest medical post to try to borrow some of the drugs she had lost in the ruins of the trailer.

Her mission was not very successful. At the medical post it seemed they were equipped to deal only with injuries to the body. They had none of the drugs she wanted, and completely failed to understand her concept of injuries to the mind. The realization that ninety-nine percent of the combatants had nothing more than splints, bandages, antibiotics and morphia available to them hit her almost with the force of a physical blow. It was something she had always known but had only just placed in context. When she got back to Lucan's office the soldier was unconscious on the floor, and Manton was gone.

Her first action was to send for Lucan. He came unwillingly at first, because the demands on his time were now considerable. When he understood the reason for Rohm's concern he swiftly deputized the major portion of his task and soon appeared in answer to her call. Their understanding of the situa-

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tion needed no words. Neither doubted where the shaven-headed little man had gone, nor what was the lure which had prompted his action. Each had a separate reason for the conclusion, but the resultant was the same. Manton had gone to see *Gottlos*.

Together they started out. They had to penetrate an area already evacuated, and only Lucan's rank could gain them admission through the guard detail which maintained a precarious perimeter around the now-abandoned plaza. Manton, apparently, had not found it necessary to obtain any such authority. Nobody had seen him come or go. Whatever motivated Manton had also lent him a caution and stealth which one would not normally associate with the man. Whether the motivation was despair, or concern, or some new emotion known only to the gestalt creatures was conjectural. Lucan could not define the reason. Rohm half-suspected but feared to put a name to her ideas—but whatever it was, it had taken Manton on paths which many better men would have feared to tread.

As they passed into the evacuated zone Lucan began to formulate the questions which had troubled him.

"Rohm, do you know what *Gottlos* is?"

"No. But the indications are that it's a *greuelmech* of more than average empathic coupling."

"What brings you to that conclusion?"

"Its reaction speed is phenomenal regardless of communication difficulties, and—"

"And what?"

"Of all the *greuelmech* Manton's encountered, this one has had the most effect on him. Others have been greater physical threats, yes, but only *Gottlos* has ever got through to the psyche. I have a feeling that Manton knows exactly what *Gottlos* is, but he's too deeply involved on a personal level to be able to explain it."

"Couldn't that be construed as treasonable? If he knows something that we don't . . ."

"Don't be so naïve! I said *able* to explain it, not *willing* to."

"A psycho-legal distinction which escapes me."

"Not even you are that shallow." Rohm rounded on him bitterly. "If you start to crucify Manton, you'll kill him."

"I wasn't thinking of crucifixion. Only of survival."

"The survival of what? Don't forget that for our own ends we've exposed Manton to empathies well outside the range of normal human experience. When a Manton-machine gestalt is out there fighting, he's part of the machine, not part of us. Do you have any complaints about the way he's saved our skins so far?"

"Of course not!"

"Then ask yourself one shatter-

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ing little question: why should the gestalt mind be particularly concerned about *our* survival?"

Lucan took her sarcasm silently, acknowledging her point with a shrug of his shoulders, while at the same time loosening the firearm at his belt. Rohm had every excuse to be overwrought. He had every reason to be cautious. The creature in the cellar was known to be a prime killer. Manton was perhaps misguided, probably mad. But in total war, personal idiosyncrasies were a luxury they could ill afford. A whole skin was the only thing that mattered.

Now they were through to the inner perimeter. This was the area immediately in jeopardy should *Gottlos* break loose. It was also the area in which they needed to concentrate heavy armaments if such an escape was to be controlled. By morning they would have a ring of heavy mortars around the spot, well able to deal with any eventuality. For the remainder of the night they would have to be content with armor-piercing rockets and a modicum of luck.

Again only Lucan's rank gained them easy access to the area. As they passed the perimeter they were as uncomfortably aware of the guns and projectors at their backs as they were of the menace in front. If events were precipitated into a shooting war, they had no possible way out. They were as likely to fall victims of their own guns as to the destructive vices of *Gottlos*. Only the certainty of Manton's destination moved them on.

At a forward emplacement for s.h.e. projectiles their certainty was proven. The senior officer called to Lucan for a private word. Lucan returned to Rohm with a frown.

"Manton's been here all right. He's borrowed ropes and a lamp. That can only mean one thing—he intends to go down to *Gottlos*. What's got into that nut?"

"Manton's not a nut—as you so crudely put it." Rohm was swiftly on the defensive. "In fact his stability is quite remarkable considering he's borne the brunt of the offensive single handed. But he's more personally involved with war machines than we are. He has to be. We can't expect him to see exactly our point of view, or we, his."

"Sophistry!" Lucan was abrupt. "I'm talking about total war, not philosophy!"

"So am I. You realize that if *Gottlos* breaks out of the cellar, as well he might, we stand to lose at least a couple of hundred men. You can't seriously think our defenses are going to hold him. Well, if anyone can stop *Gottlos* breaking out tonight, it can be only Manton."

"A hundred kilos of s.h.e. would do the job more effectively."

"But you haven't got a hundred kilos of s.h.e., and won't have for at least six hours. So we don't have

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any option but to play it Manton's way."

"I wish I knew what his way was. Why didn't he put up some plan instead of just going off?"

"Probably because we wouldn't have believed him. He knows those creatures from the inside. We don't. What makes sense to him could seem pretty nebulous to us."

As they reached the edge of the plaza they stopped abruptly. The broad beam from the handlamp had been directed across an area adjacent to the edge of the collapse. Manton was working within the illuminated zone, apparently securing a knotted rope to part of a broken wall preparatory to lowering himself into the dreadful cellar. There was no attempt at concealment in Manton's approach. He was cursing freely at the quality of the knots he could make with his cold fingers, and repeatedly wandering to the edge of the fracture as if to re-assure *Gottlos* that he had not abandoned his intention of coming down.

Lucan and Rohm advanced cautiously until they were within calling distance.

"Manton—what's going on?" Rohm carefully timed her question to come at a point where Manton was well away from the cellar's edge.

He showed no surprise at their intrusion; indeed, he may have been waiting for it.

"If you want to help, you can come and steady this damn rope."

The shock had gone out of his face and the unusual exertion had repaired the pallor normal to his skin. Contrary to seeming unreasonable, as Rohm had feared, Manton was obviously confident about what he was doing. His only expression was a compression of his lips into an enigmatic line of amusement.

"What are you going to do?" Lucan was direct.

"Go down there, of course."

"What for?"

A raised eyebrow acknowledged the question. "Don't you want to know why *Gottlos* came in quietly instead of blasting the sector apart?"

"Does it matter now? We can't afford to let you take risks, Manton. *Gottlos* is trapped down there—and that's surely all that counts."

"Trapped!" Manton's face was crossed with incredulity. "God! You can't trap a war machine by dropping it in a cellar. If *Gottlos* wants to come out, he'll come out—even if most of the plaza has to be destroyed in the process. And, if he comes out before you get your reinforcements, you know as well as I that he'll cut the garrison to ribbons before he heads out for the hills."

"Then what's keeping him down there?"

"The possibility that I can relieve him of the necessity of wanting to come out."

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"What does he want, then? Revenge for what Fiendish did on the hill?"

"I don't think so. If he'd wanted to kill me, he'd have done it long ago. I'm not certain yet, but I think *Gottlos* is still trying to make the same point he tried to make to Fiendish that day in the command post. I didn't understand him then, but I think I do now."

"I wish I did."

"I think you're beginning to," said Manton cryptically. "You've just started referring to *Gottlos* as 'him' instead of 'it'. That's a promising sign."

With the rope knotted to his satisfaction, Manton threw the end down and prepared to make his descent. Both Rohm and Lucan went to help him, but he accepted only Rohm's assistance.

Turning to Lucan he asked: "Have you got a pistol?"

"Certainly." Lucan drew the firearm from his waist and offered it.

"No, I don't want it. But I'd be happier if you'd stand on the edge ready to fire, just in case I've misjudged *Gottlos*."

"But what good is a handgun against a *greuelmech?*"

"I didn't mean for shooting at him. I meant for shooting at me. You've seen some of the bodies we've picked up on the rowen after the *Unheilig* had finished their sport."

Lucan, acquiring a new respect both for Manton's courage and for his sanity, nodded a wry agreement.

"I hope you know what you're doing."

Manton glanced at his watch. "If any of us are still alive by morning, I think we can safely assume that I did." Then he began to climb down into the darkness of the hole at the bottom of which lurked Gottlos.

Rohm came forward with the handlamp, intending to illuminate the way for Manton. But as she approached the edge of the broken pavement a sudden brilliance shone upwards from the bottom of the dark recess. *Gottlos* had switched on his headlamps. To their credit, neither she nor Lucan flinched as the spotlamps played on them curiously and then concentrated on Manton swinging inexpertly down the knotted rope. Although they knew they were both as good as dead if *Gottlos* chose to use any sort of weapon, their greater fear was still for Manton and his appointment with the gross mechanical murder-engine which dwelt below.

As yet Rohm could not see *Gottlos* against the brilliance of the light, and could only infer his position and orientation from the disposition of his lamps. The picture that imagination painted of the great armed beast was probably no less frightening than that which true sight would have revealed. The shocking thing about the scene was

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the fact that Manton was similarly handicapped by an inability to see the waiting creature as he continued down into the confines of the cellar.

The area of the collapse was probably no more than ten meters by five, with walls of old, shored brickwork, greened with slime, forming a suitably sordid backdrop to any atrocity to which *Gottlos* might decide to lend his name. Lucan had eyes only for Manton, keeping him at all times in the sights of his primed revolver. Whatever stress he was under he controlled remarkably as he called to Rohm to use her own light to illuminate Manton lest *Gottlos* should stage a blackout to cover some critical movement. Occasionally one of *Gottlos*'s lamps would rove upwards as if to probe the anxious faces looking down. With the range of vision systems with which he ought to have been provided he would certainly have had no need of the light to assist his seeing, but they could think of no other reason for this curious gesture.

When Manton reached the floor he began to climb warily over the fallen masonry and flagstones which had gone down in the collapse. As if to assist him, *Gottlos* divided and re-directed his lights so as to scatter the illumination back from the rotting walls rather than to blind Manton by expecting him to walk directly towards the source. Rohm supplemented the light in Manton's path by using the handlamp from above. This lent a curiously theatrical effect to the drama, as though it had been deliberately staged by some master of the macabre. Nevertheless, the result was now of Manton walking towards a patch of blackness, concealed in which was a box of terrors such as no Pandora had ever been wretched enough to know.

Experimentally Rohm tried to bring her light to bear on *Gottlos*. The swinging beam failed to find him, and she realized with a shock that *Gottlos* had retreated into some ancient alcove, the access to which was still partially covered by crumbling, but yet unfallen, masonry. In any event she was unable to secure an angle which would reveal the *greuelmech*, and she called to Manton, begging him to stop.

Manton looked up, his face inscrutably lacking in contrast under the powerful lens of the lamp. He shouted something, but the words were absorbed and distorted by the acoustics of the pit into which he had come, and no sense survived. Then he shrugged his shoulders and shook his head several times, as he habitually did when at a loss to account for the world, and sat down on a fallen flagstone and waited.

For Rohm the succeeding drama was never to be forgotten. Slowly at first, then with greater rapidity, the huge machine came out of the alcove and moved towards Man-

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ton. It was black and fully as large and armed and armored as Fiendish had been. Yet despite its weight, which crushed brick and beams to powder under its tracks, the purr of its motors was scarcely audible. It seemed to move with a finesse which would have done credit to a ballet dancer.

It came to within a meter of Manton, well within range had it chosen to attack with its manipulators. Manton sat regarding it with an interest which apparently did not include a regard for his own safety. Lucan swore and moved his position so as to be able to keep a direct aim on Manton. Although neither of the two in the plaza could hear the words it was certain that Manton was talking to *Gottlos* —an eerie soliloquy because the great machine had no possible means of answering.

Time passed. Then after nearly an hour there came a change. *Gottlos* moved back into the alcove and out of the handlamp's range, and dimmed his own illumination. Something sounded, metal upon metal. Manton followed the terror into the dark corner. The watchers waited, feeling profoundly inadequate. Then Manton came out again, waved briefly, and began to climb back up the rope. Rohm and Lucan helped him over the edge, impatient with questions, but Manton cut them short.

"We have exactly eighty-five minutes until *Gottlos* destructs. Lucan, you've got to get back there and get the area evacuated. *Gottlos* has a fissile power unit which will clear a three kilometer radius when it goes up."

Lucan was dubious. "We'd look damn silly if we cleared a three kilometer radius and he came out instead of destructing. With us trying to hold that sort of perimeter he could easily clean out the whole garrison."

"He won't come out." Manton was positive. "You'll have to take my word for it. He knew he had to die. It was only a question of how and when."

"It's a risky business. What makes you so certain he's going to destruct?"

"He will," said Manton quietly. "He doesn't have much choice. Rohm, I want you to come down and see something before the big bang. As an expert on the gestalt, there're a few things you can learn now that you'll probably never get the chance to learn later."

"Are you mad?" Lucan rounded on him. "Risking your own fool neck is one thing, but exposing a woman to a functioning *greuelmech* is criminal lunacy."

Rohm caught his arm and shook her head. "I think I'd better go down there, Lucan. This is just beginning to make sense."

"What is?"

"What Manton said about *Gottlos* knowing he had to die. Machines don't die."

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"Don't you start talking riddles, too. Manton's sick."

"No, he's not. But I sometimes wonder if we are. Have a fast carrier standing by at the edge here, and get everyone else back out of range. We'll get ourselves out."

"Rohm, I—" Words failed Lucan, but he handed her the pistol. She looked at it speculatively, then handed it back.

"If Manton's wrong, that isn't going to help. If he's right, we shan't need it. Come on, Manton. Let's go talk to this friend of yours."

This last sentence was a piece of bravado which fled as soon as she felt herself swinging on the rope. *Gottlos* came out of his corner and obligingly illuminated the cellar walls, but the knowledge of what kind of creature was providing the light made her fervently wish she were climbing into darkness. As she descended she felt a rising tide of panic blurring her reactions, and wondered if she had the courage to continue. Then she managed to clamp a quietude over her fear, and found a new person inside herself who could function where the dictates of survival said panic and run.

At the bottom she paused against the damp-slimed walls and waited for Manton to join her. Outwardly he seemed more confident than she, but an involuntary pulse in his throat betrayed the great tensions that racked him inside. Facing *Gottlos*'s lamps was an appalling sensation, since if the great machine decided to attack it had every conceivable advantage including the visual one. But Manton waved his arms and the illumination was directed upwards and outwards so that the whole cavity was lit by scatter and reflection from the walls. Manton moved forward and Rohm followed, fighting the retinal after-sensation which troubled her sight yet fearing what she would see when her vision cleared.

Then she was standing in the presence of *Gottlos*. She recoiled involuntarily from the huge, black sleekness of the creature which was several times larger than even her imagination had painted it. Since she did not know the disposition of its receptors, she had no means of knowing whether it was watching her intently or whether it was completely disinterested. Its great manipulators were moving backwards and forwards with obvious indecision. Forgetting that these same instruments could tear a carrier apart, and not knowing what her own reaction should be, she confusedly held out her hand in greeting. One manipulator met her hand precisely and shook it with just the right degree of weight and pressure.

The shock which she received from this action was psychological and not physical. The incongruity of the act was swamped by the

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same realization that had keeled Manton over when Fiendish had met his master in the command post on the hill.

"*Gottlos* is alive!" she said.

Manton nodded and led the way round the back of *Gottlos* to where certain protrusions in the black shell were unfamiliar in any make of war machine.

"Life-support systems. Artificial heart-lung . . . artificial kidney . . . artificial almost everything. The only bit that isn't artificial is the brain. I don't know where that is, but it's inside somewhere. No wonder Lucan couldn't find any command signals. *Gottlos* didn't need any. His operator got wired right in—but good!"

Nausea suddenly overcame him and he retched over a pile of bricks, returning to the conversation with moist eyes and a handkerchief poised in readiness.

"Trouble is, they forgot the power of the gestalt. Human brain plus war machine do not equal human brain plus war machine. It makes a new creature with a different identity and different sympathies. The fact that the war system usually works is because the operator gets time to return to normality between missions. But when you wire it in permanently, then you're *really* taking on God on his own territory. Do you understand what I'm saying, Rohm?"

"I think so. You mean that the true gestalt doesn't retain its human sympathies—it's as liable to set up new loyalties for itself?"

"Frankly it doesn't give a damn about us or our stupid wars."

"Then what is *Gottlos* doing here?"

"I had to figure it his way. He was the only true gestalt creature in existence. He was lonely. In fact, he must have known loneliness as no other consciousness has ever known it. Then he came across Fiendish, who was far nearer a true gestalt creature than any of the *greuelmech*. *Gottlos* had no intention of destroying Fiendish, but needed to inactivate him until he could find a way to communicate. Fiendish didn't wait—he destructed. So the only hope *Gottlos* had of establishing any sort of liaison with anyone who could understand him, was to seek the human element of Fiendish's gestalt. He came to me."

Rohm became aware that the huge murder engine had turned and moved closer behind them. She sensed, rather than saw, the manipulators hanging above their heads, and knew that with any casual movement it could distribute their brains in a slurry of fractured bone. Darkly now she could feel the creature's attention, almost sense its reaction to the conversation. She wanted to cry out and run, but Manton, face impassive, pursued his subject.

"He needed someone to under-

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stand him—to give recognition to the separate identity of the gestalt—and probably to warn us not to make the same mistake ourselves."

She drew her breath in sharply as she realized where Manton was leading the conversation. Behind her *Gottlos* stiffened as though her answer was critical. She considered throwing herself forward out of range of the swinging steel, but was stopped by the certain knowledge that any attempt at evasion was futile. Even in open country *Gottlos* could easily have caught her and played with her in the manner of war machines as a cat plays with a mouse. In the cellar she had no chance at all.

"So you knew?" she asked at last.

Manton shrugged. "I guessed. I knew it was your job to find ways of tightening the man-machine coupling. I don't seriously suppose I'd rate the personal attention of a gestalt psychologist who's also a neurosurgeon if there wasn't the intention of one day trying to take the coupling to the ultimate."

"You're jumping to conclusions, Manton." She felt *Gottlos* almost lean over her.

"Am I? Can you honestly deny that you intended to try to wire me into a war machine as someone got wired into *Gottlos?*" His hand moved mechanically across his shaven scalp.

"The possibility was discussed, yes."

"But seeing what happened to *Gottlos,* does it still seem like a good idea?"

Rohm was watching *Gottlos* warily. "Not very. And that's really the thing you wanted me to come down here to learn. wasn't it?"

"Yes." Manton looked at *Gottlos,* and presumably the machine looked back. If ever there was a moment of complete rapport between man and machine it was in that fleeting instant. Without seeming to move, Rohm felt the mechanism relax.

Manton nodded. "I think you've just completed the point of *Gottlos*'s visit." He glanced at his watch. "Lucan should have that carrier waiting by now."

Rohm looked at *Gottlos* dubiously. "Are you absolutely sure he's going to destruct?"

"My dear Rohm, what else is there left in life for him to do except go around killing and being hunted until he runs out of armaments or fuel? He's too intelligent to accept that as a mode of life."

"But couldn't he try to get back to his own side?"

"If someone had done that to you, don't you think you'd hate them more than you'd hate the nominal enemy?"

She didn't answer, but followed Manton carefully across the cellar under the swinging steel manipulators which were designed only for killing and destruction. Dumbly,

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Gottlos watched them go. Neither Manton nor Rohm could think of a fitting word, or gesture, to mark the occasion. *Gottlos,* for his part, moved from their path and illuminated the way, but the whole atmosphere was charged with things unsaid and emotions unexpressed.

When she came to climb the rope again, Rohm could scarcely maintain her grip through a sudden bout of weakness and trembling. Somehow she fought her way to the top, lit from below by the twin headlamps of the deadliest yet most pathetic machine ever devised. Manton stopped at the foot of the rope and saluted gravely before joining her. In the carrier she pulled her coat around her and sat huddled in the canvas bucket seat shivering, while Manton, strangely composed now, fought the controls which thrust the vehicle onward into the night.

Sometime later he stopped and slewed the vehicle round to face back to the center of the city. Obediently to the second, the fireflash and the multiple shockblast shook the air and robbed the night of darkness. *Gottlos* had destructed.

In the light of the flash Rohm glimpsed Manton's face and thought he was smiling.

"I don't see one damn thing in this to laugh at," said Rohm. Reaction was turning fear back into anger.

"It wasn't laughter, it was irony. Let me tell you something, Rohm. You're not going to be convinced by *Gottlos.* You'll always think you know a better way. It won't be me now, but quite surely some other poor devil's going to get wired into some super Fiendish . . . and again . . . and again until you finally realize you cannot possibly hope to win. You won't have any idea of the anguish you'll be causing, because you still have the erroneous idea that you're the highest form of life on earth. By that time you won't be, but you won't admit it until it's far too late."

"I don't quite follow."

"No? You've heard me say it before. The war machines are the *real* creatures of this generation. We've made the world so brutal and ugly that they alone can live in it. They can't reproduce, but that doesn't matter. They can outlast us. You'll either fail to create the true gestalt creatures, or you'll fail to survive their creation. Either way you're going to lose. Leave the gestalt alone, Rohm. Even God never attempted to blend man and machine."

"You speak as though you were not one of us." Her frown was lost in the darkness.

Manton started the engine again and brought the vehicle expertly round. He pressed into her hand a small metal object.

"*Gottlos*'s safety key to his destruct mechanism. Even the people

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who made him didn't trust him not to use it. They made it the one control he couldn't operate for himself. It was I who set the destruct mechanism for him."

"You?"

"Rohm, think what you've done to me. I'm that far steeped in gestalt experience that I could understand the agony of every hour he knew. And he was the lucky one. I'm poised out in some limbo where I'm truly neither one thing nor the other. I suppose I've a couple of years more useful life out on the rowen before I forget you as *Gottlos* forgot the operators in the command post. But where do I turn for somebody to help me to destruct?"■

IN TIMES TO COME

Harry Harrison's new serial starts next month—a story with a real point that should interest scientist and science-fictioneer alike. Given: An invention an Israeli scientist stumbles upon that he names the *Daleth* effect. He's found the secret of the fantastic energy of the quasars—a new realm of physics. Anti-gravity—non-conservation of energy—a true space drive . . .

And a terrible problem.

It can change the world. It can, also, if misused, annihilate the world. And if it becomes known that Israel has it the violent tensions of the mid-east will assuredly mean the immediate invasion and annihilation of the nation.

His problem is to protect it, yet develop it—and Israel simply is not the place to do it!

He does find an optimum place—but it's far from safe! Inevitably, every "security" force in the world seeks to infiltrate, steal, capture, to possess in any way possible, the Great Secret.

"In Our Hands" is not a peaceful story. It is realistic though—and has a genuine, realistic answer to the question of the responsibility of a scientist with a great discovery—a great power for either Good or Evil.

For the Daleth effect is greater than nuclear energy; what *is* a scientist's responsibility?

THE EDITOR

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telepathy—did it happen?

A genuinely scientific experiment on whether telepathy can occur or not, involving an information theory analysis of the phenomenon in terms of a "high-noise signal channel" was undertaken. This U. S. experiment was independently duplicated by a Czech group with similar positive results.

by
J. B. RESWICK
and
L. VODONIK*

A pretty young girl sits alone at a table in a starkly furnished room. Her name is Judy. Each hand is poised over an electric push button at either side of a small box on the table before her. As she watches intently, a white disk in the box lights up every two seconds. She seems hesitant, but with each light signal, she concentrates and then pushes one or the other button.

In another barren room, far removed, a young man is doing much the same thing. But Warren is confident and assured. He is watching a small screen that also lights every two seconds, but with colors—sometimes red, sometimes green, and occasionally yellow. Each time

*James B. Reswick, Leonard Case, Jr., Professor and Director, Engineering Design Center, Case Western Reserve University, Cleveland, Ohio.

Lojze Vodovnik, Assistant Professor, Biomedical Engineering, Case Western Reserve University, Cleveland, Ohio, and Associate Professor, Electrical Engineering, University of Ljubliana, Yugoslavia.

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a red or green appears, he quickly pushes a button of the same color. On the yellow signal, he does nothing.

In yet another room, somewhere between the first two, a small group of researchers hovers around an electronic unit that is clicking away. Nearby is a card-punch machine that fills the room with sounds of punching. Every so often a new card replaces one full of holes. The researchers stare with fascination at two counters on the electronic box. One increases its total with each click; the other changes only every so often. Its indicated number seems to be about half that of the first.

What is happening?

Warren and Judy are attempting to transmit a message by means of telepathy—or perhaps by clairvoyance—under scientifically controlled conditions.

The experiments took place in our laboratory at Case Institute of Technology some years ago. Their purpose was to see if the application of simple information theory could increase the likelihood that a message would be transmitted by means of ESP.

A message was sent and correctly received, without mistake, between Warren and Judy who were separated by a considerable distance. Here is how it was done.

First of all, let us tell you about the idea behind the experiment. We will liken sending a message by means of telepathy to sending a message by radio-telegraph. As anyone knows who has received an international telegram, there is some possibility that a given letter in a word may be transmitted incorrectly. Modern technology makes this probability fairly small

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but it still may happen.

Suppose, now, your telegram is repeatedly sent, say, five times. It is very unlikely that any letter will be incorrectly received more than once or, at the most, twice. This means that if you compare the same letter in each of the five separate messages and you find it is the same in three or more of the telegrams, it is almost certain to be the correct letter. This is an example of the simplest way to improve the accuracy of transmission of a message by means of repetition or redundancy, a fundamental concept in information theory.[1]

Now suppose there is a tremendous amount of noise and only a slight chance that the letter will be received correctly. You can still get the message through if you repeat the transmission enough times. Information theory can predict how many times you need to repeat the message given a certain ratio of noise to signal, or probability of getting the letter correct, which is the same thing. Now what has all of this to do with telepathy?

The average of some hundred thousand trials using Zener cards* to transmit a signal by ESP throughout the world suggests a general ESP effect of around 1 to 2%.[2,3] (By "ESP effect" we mean that the probability of guessing one out of five Zener cards correctly is more than the 20% chance probability of correct guessing.) Scientists have been arguing for years whether or not this 1 to 2% really exists. Let us assume that it does. That is, let us assume that when a message is being transmitted by means of telepathy, there is only a 1 to 2% chance that any letter or symbol will be received correctly above its statistical chance of being guessed. The situation is not unlike transmitting a message electrically in the presence of great disturbance or, in the case of radiotelegraphy, in what is called a very noisy channel.

Our idea was to devise a scheme to repeat a particular message a sufficient number of times so that the probability of getting a particular symbol correct is raised from a very low value to a much higher value. This is what our experiment was all about and here is how we did it.

THE MESSAGE SYMBOL

We chose the simplest possible symbol—a binary symbol. Binary simply means that the symbol can take only two forms and has, therefore, a 50% chance of being correctly guessed. In our case, we chose red and green. We might have chosen zero and one—the binary code of most computers. They're essentially the same. We chose red and green because the

*Zener cards are widely used in ESP experiments and commercial games. Each of five cards contains a different geometric symbol. The percipient or receiver attempts to guess the symbol on a card held by the agent or sender. Pure chance places odds at one in five or 20% for correct guessing.

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human being has more psychological response to colors—stop/go, Christmas, grass, blood, communism, et cetera—than he may have to zero and one. (Perhaps our computer-oriented children will grow up differently.) Thus, our message was written in a code in which each "letter" or symbol has only one of two values.

Our idea was simply to have the sender and the receiver attempt the transmission of a message composed of red and green symbols a number of times. We would keep a record of the guesses of the receiver and merely say that whichever color was guessed most often —majority decision—would be taken as the correct color for that particular letter of the message. It stands to reason that if there is some ESP going between the sender and receiver, the correct color should be guessed slightly more often than the incorrect color. This is the heart of the idea and it's that simple!

But there are a few sticky problems in making this idea operational. For example: Suppose the sender or receiver has a preference for one color over the other, as is very likely. Or suppose there's some kind of inversion going on and the receiver guesses more greens when red is correct. And how about the timing problem? If you're going to send thousands of trials, it's got to be done fairly fast with perfect synchronism between the sender and receiver.

Well, we went to some lengths to overcome these problems. First, we obtained an IBM 026 card-punch machine, and we built some special equipment with telephone-type stepping switches to automatically repeat the message over and over again. We made up some gadgets to signal the participants when they were supposed to react and to automatically record their responses on the IBM card punch. Having the data punched out on cards made it easy to do the adding and averaging on a computer. The other problems are discussed in the following sections.

THE MESSAGE

Our message was the number 13 to be transmitted in a binary code of red and green. Written in binary form, the number 13 is 1101* and contains just four "bits." It seems like a darned short message but, as we'll see, it took over thirteen hours to send. Now the first thing we worried about was the possibility of inversion or getting the message just exactly backward. (If the number 13 is inverted in binary form, it comes out 0010 or 2.) We, therefore, decided to add the digit 0 in front to make our message 01101 and always make the first symbol zero. (This is a kind of parity

*In binary code 0=0; 1=1; 2=10; 3=11; 4=100; 5=101; 6=110; 7=111; 8=1000; et cetera.

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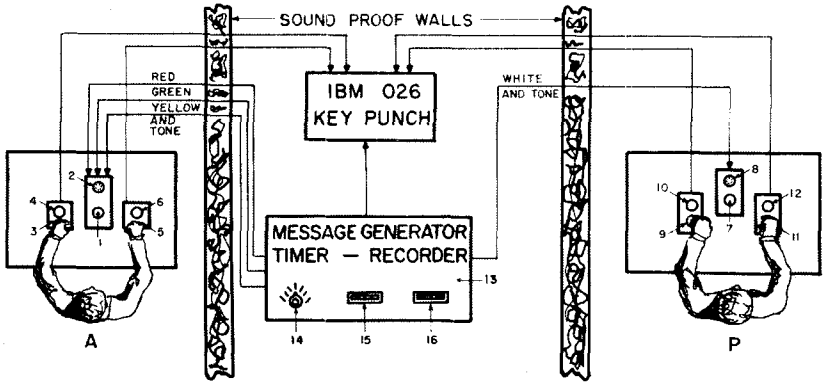

SENDER (AGENT)	AUTOMATIC EQUIPMENT	RECEIVER (PERCIPIENT)
Equipment:		*Equipment*:
(a) Message indicator with screen (1) which lights red, green, or yellow and tone signal (2)	(a) Message Generator (13) has message and nonsense symbols stored on stepping switch. Timer (14) sets symbol interval time (approximately 2 seconds.) Indicator (15) shows number of symbols correctly received, indicator (16) shows total number of symbols sent.	(a) Pacer indicator with light (7) and tone signal (8)
(b) Left-hand red unit with red push button (3) and red pilot light (4)	(b) Card punch is wired to record automatically on punched cards all events.	(b) Left-hand red unit with red push button (9) and red pilot light (10)
(c) Right-hand green unit with green push button (5) and green pilot light (6)		(c) Right-hand green unit with green push button (11) and green pilot light (12)

Figure 1. Schematic of Experimental Setup.

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check.) Then, whichever color the receiver declares for the first symbol will set the pattern for all of the symbols of the message.

Next we worried about the preference which the sender and receiver might have for one color or the other. We decided the way to handle this problem was to send the message *twice* each time: once using green to represent zero, and the second time using red to represent zero. Now the message becomes twice as long, and if we let green represent zero and red represent one of the first, and then the reverse the second time, a complete message of ten symbols would come out:

GRRGRRGGRG

Here's how we hoped this arrangement would work out. We would send the ten-symbol message about 800 times.* Each symbol in the message would be sent an equal number of times, first as one color and then as the other. We would then *add together* all of the results for the symbol when sent as red with all of the results when the symbol was sent as green. (Note: *To make this come out right, we would first invert—call red, green, et cetera—when counting guesses for the second half of the message.*) In this way, any bias for one or the other color would average out, leaving only the bias resulting from ESP, if present.

For example, in the actual experiment—this is jumping ahead to the RESULTS section—the first symbol "0" was guessed 400 times as *red* in the first half of the message—just five times more than chance would have it: 790/2—and 412 times as *green* in the second half of the message—17 times over chance. Using the first half to set the color, we determined the total of guesses above average to be 5 + 17, or 22 red. Knowing in advance that the first symbol is "0", we set our code to be red = 0 and green = 1—but this is getting ahead of our story.

We thought it would be interesting to add something else to the experiment to determine the extent of color bias. We added to the message what we called "nonsense symbols."

These symbols were presented to Warren with the instruction that he do nothing. He should not respond in any way. Judy had no knowledge that nonsense symbols were being sent and would, therefore, respond to the best of her ability. We felt it would be interesting to see how these responses added up. We called our nonsense symbols "yellow" and interspersed them in the message so that the message came

*We needed 800 guesses to beat the "Law of Sines" which says that the distribution of two random events of equal probability of occurrence shows a sinusoidal drift around the mean of 0.5. (See reference 4.) Furthermore, we calculated that if an ESP effect of 2% was present, a repetition of 625 times would produce a probability of 84% for a majority decision giving the correct symbol. This calculation is a bit complicated, but we'll be happy to send details to anyone who is interested.

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out with a yellow nonsense symbol preceding and following each group of greens and reds and looked like the following:

YGRRGRYRGGRGY

Well, so much for the theory and the message. Let's look at the experiment and the results.

THE EXPERIMENTAL SETUP

We wish we could have found a sender-receiver pair of proven ESP ability. A pair of identical twins would have been our first choice. But it turned out to be something of a problem to find a couple who would be willing to sit for hours, day after day, accumulating the number of trials we felt were required. We settled on a pair of students—a girl and boy very much in love. Judy and Warren worked out just fine. They were convinced they had something going between themselves and were anxious to see if the scientific method would show it.

Figure 1 shows a schematic of the entire experimental setup, and Figures 2-5 show the equipment used. The rooms were actually far apart so that there was no possibility of subliminal sound perception by Judy.

At this point, let us discuss one more assumption we made from a theoretical point of view. We felt the actions and responses of the sender and receiver should be *physical* as well as *mental,* and since we had chosen a binary coding scheme, we figured that actions involving the *left and right hands* would be most appropriate. Since the left hand is associated with the right half brain and the right hand with the left half brain, we felt that the mental and physical actions involved stood a good chance of being more different than anything

Figure 2.
Sender's Push Buttons and Message Screen—Tone Signal.

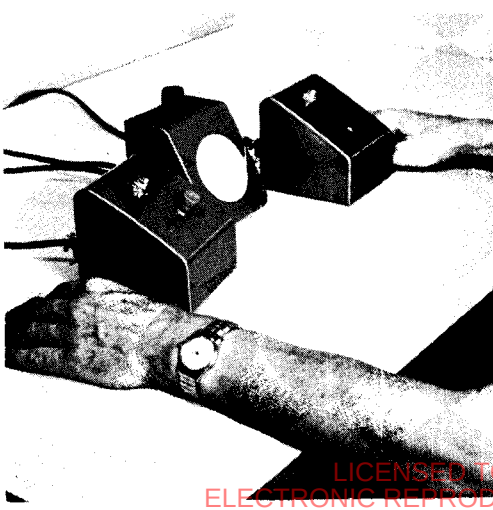

Figure 3.
Receiver's Push Buttons and Synchronizing Light-Tone Signal.

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else we could think of.

We have no idea what constitutes the transmission energy of ESP—if any—but it just might be that flipping from the left to the right side of the brain could generate stronger signals—who knows? So we rigged up a red button and a green button for the sender to push with his left and right hands. When he pushed the red button a red light lit up, and when he pushed the green button, a green light came on. In front of him was the message screen, a white disk with red, green, and yellow lamps behind it. (See Figure 1.) These lamps are lighted automatically by the Message Generator—the electronic device which repeats the message over and over again. There was also a tone signal built in which sounds each time a symbol is presented to alert the sender.

Figure 3 shows the receiver's push buttons which are just like the sender's with red and green lights, but the receiver, of course, has no color message screen in front of her—she's guessing the message! She had only a white disk that lit up each time the sender's message screen lit up, and she had a tone signal which operated in synchronism with his. In this way, each knew precisely when a symbol was being transmitted.

Figure 4 shows the Message Generator/Timer-Recorder—the brain center of the experiment. It presents the thirteen-bit message over and over again to the sender by means of a telephone stepping switch, records correct responses and total guesses, and acts as an input to the IBM 026 Key Punch shown in Figure 5.

Figure 4.
Message Generator, Time-Recorder.

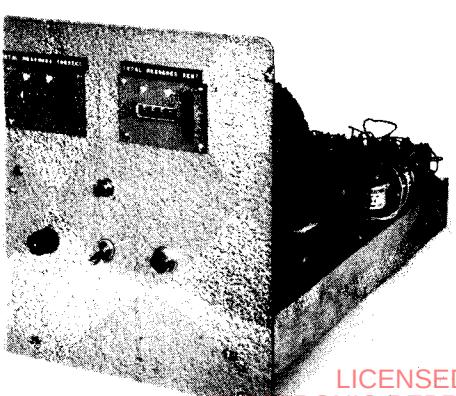
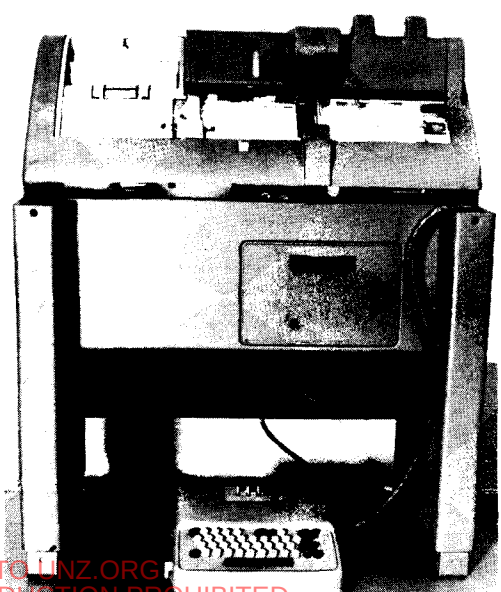


Figure 5.
026 IBM Key Punch.



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Let us describe, now, how the experiment works if you haven't already figured it out. The message generator started out with the first symbol of the message—now the "nonsense symbol"—by lighting the yellow lamp in the sender's message screen. Warren was instructed to do nothing on seeing the yellow signal. The electrical impulse which corresponds to the yellow, or nonsense, symbol was automatically punched with an appropriate number on an IBM card. Judy saw a lighted light and heard a tone signal. She tried to imagine what color was sent and pushed an appropriate button—red or green. The result of this action was also punched automatically on the IBM card. That's how the first symbol was sent.

After two seconds, the message generator lit up the second symbol of the message, a green. Warren immediately pushed the green button with his right hand. He may have thought "green" or something associated with green—like GO!—or anything else he may happen to have been thinking about. The signal from the message generator which flashed green before Warren also punched an appropriate num-

RESULTS

Following is a tabulation of the results of 790 message repetitions:

Symbol	Majority Guesses First Half of Message	No. Guesses Above 395 in First Half of Message	Majority Guesses Second Half of Message	No. Guesses Above 395 of Opposite Symbol Color in First Half of Message
First (0)	408 Red	+ 5	412 Green	+ 17
Second (1)	408 Green	+ 13	428 Red	+ 33
Third (1)	425 Green	+ 30	405 Green	− 10
Fourth (0)	425 Red	+ 30	408 Red	− 13
Fifth (1)	423 Green	+ 28	410 Green	− 15

The message was decoded by adding the number of reds and greens received over average for each message symbol as explained previously. The sum of the number of guesses in excess of half the total number of trials (790/2 = 395) for the first half of message plus the number of guesses (opposite color) for the second half of message was determined. It came out as follows:

Symbol 1	Symbol 2	Symbol 3	Symbol 4	Symbol 5
22 Red	46 Green	20 Green	17 Red	13 Green

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ber on the IBM card and his action was also punched. This was done to make sure that he really did what he was supposed to. Now Judy got the same light signal and tone, and so she again tried to guess which color Warren sent and pushed whichever button she wished.* Her response was, of course, punched again on the IBM card.

And so this continued all the way through the thirteen symbols of the message, and then was repeated over and over again. Remember, *Judy had no knowledge of how long the message was or any knowledge that it contained nonsense bits.*

Our test message containing thirteen symbols was presented to Warren a total of 790 times in a sequence of tests during a two-week period. It was found best to run the test for periods of about ten minutes—140 trials—and then rest for about three to five minutes. Nine testing sessions ranged in length from forty-five minutes to three hours. During the period of the tests, a total of 10,270 trials was made. (*Opposite*)

Since symbol 1 came out with an excess of reds, we determined that red should represent zero—as explained previously. *The remaining four symbols, then, are 1101 indicating that the message was received without error.*

So the message came through without error! But the odds on this alone are not highly against it happening—2^4 or 1 chance in 16, to be exact. However, the consistency of the trends shown in Figure 6 seems to show a causal agent at work. In the figure, we have plotted the excess of reds and greens over 50% as a function of the number of guesses. After the 200th try, four of the five symbols were correct, and by the 700th guess, the message was correctly indicated.

Figure 7 shows the overall accumulation of correct guesses above average plotted against the total number of guesses. The fact that the curve drifts away from average at a roughly constant slope of -1.35 suggests the presence of ESP active at about 1.4%. This agrees rather well with previously reported values in long-term Zener card experiments. Note that the correct guesses are indicated with minus signs, that is, there *was* an inversion in the experiment. Perhaps the left half of Judy's brain responds more readily to the right half of Warren's. Incidentally, they are both right-handed.

Figure 8 shows the results of plotting the responses to the nonsense bits. There is a trend toward an increase in red over green. This result made us glad that we used an equal number of reds and greens for each symbol.

*Query? Will Judy get a signal from Warren (telepathy), or will she just know what the machine did/will do (clairvoyance)? Or what?

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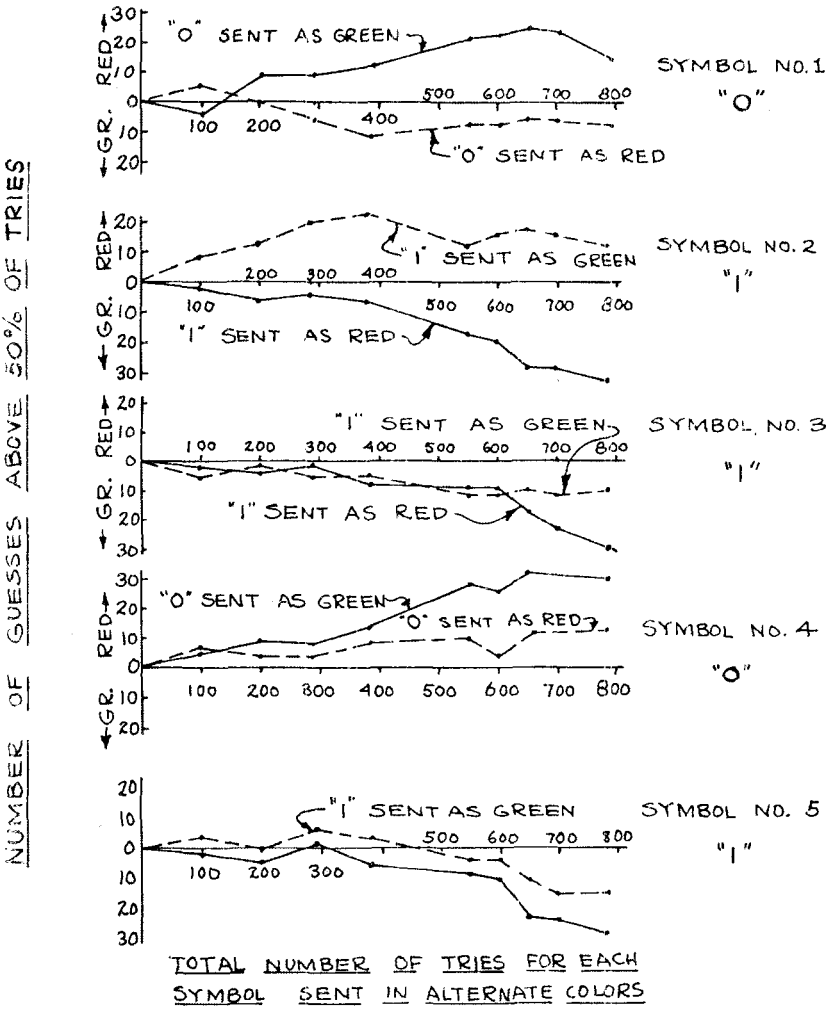

Figure 6. Number of Guesses by Color Above 50% of Tries for each Message Symbol vs. Total Number of Tries.

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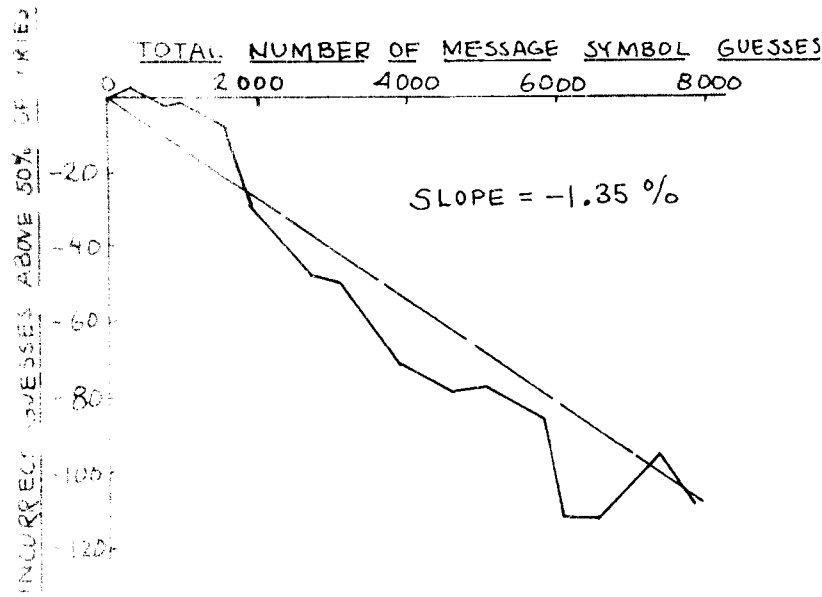

Figure 7. Record of All Message Symbol Guesses. Chart Shows Consistent Incorrect Guessing (i.e. Red for Green and visa versa). Bias toward Red is Averaged Out. Slope May Indicate Coefficient of ESP Present During Experiment.

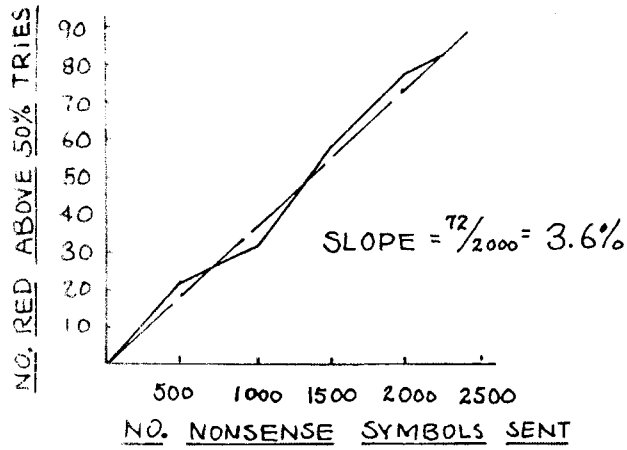

Figure 8. Response to Nonsense Symbols. No Red Responses above Average vs. Number of Nonsense Symbols sent.

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It is difficult for the authors to restrain their enthusiasm for the apparent success of these tests, but they know full well that only after the experiment has been repeated a number of times by many different investigators under very carefully controlled conditions will the concept be validated.

The authors feel they have presented an experimental technique which can "amplify" the effect of ESP—if it exists—to a level where controversy over the significance of small shifts in statistically determined means can be settled. Also possible is a technique for communication by means of ESP.

Another kind of experiment suggests itself to the authors. Suppose in a great room, or even a city, with everyone watching TV or listening to radio, each person was presented with a coded message in binary form. We wonder if the majority of their responses would indicate the correct message. Picture an astronaut circling the globe sending a binary coded message with accurate time impulses to a TV or radio station. The station could send out timing pulses and ask, perhaps, 100,000 people to check blocks in a simple card that could be processed in an electrical machine. We wonder very much whether or not 100,000 people could possibly be wrong.

There's a hooker here, though, that we haven't solved. How do you handle the inversion problem? Would half the people respond to left and the other half to right?

Acknowledgments:

A number of people have been involved in these tests. Howard Apple, Prather Randle, Warren Oksman, and James Reddy supervised these tests, maintained the equipment, and reduced the data. Warren Oksman and Judy Scher spent many long hours as Agent and Percipient.

The loan from the CWRU Computing Center of the 026 Key Punch was much appreciated.

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weapon of the ages

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The planet seemed lost in senility,
the bent and weakened natives indifferent to the coming attack . . .
They were—with adequate reason!

W. MACFARLANE
Illustrated by Leo Summers

They had no common language.

Peter Zoll shook with impatience. He made himself walk slowly back to the control module. He searched the mad jungle of food and equipment and books until he found the pad and stylus. Then he eased out of the battered lock and knelt on the vitrified stone. He put his hand on the pad and traced around it.

The old men and women watched him amiably. They did not understand this convention. Zoll doggedly drew a man and pointed to the feet and touched his feet with the stylus. A bright-eyed woman with faded red hair sucked in her breath and whistled softly. She took the pad and explained the relationship between his eyes and ears and the eyes and ears of the sketch. The others crowded close to examine it. One by one they whistled. Zoll got to his feet and staggered as the spaceport heaved under him.

The measure of his urgency lay in the first words he had shouted when the eight men and women had come out of the forest: "Take me to your leader!" He was self-conscious about such an ingenuous outburst. He had been a Pointman for sixteen years and there was no job in the galaxy more demanding, responsible or rewarding. He was no cadet. He was not a green apprentice. Desperately he steadied himself.

He took back the pad and sketched the control module. They had no difficulty in accepting the idea that it had been part of a destroyed spaceship. One of the men picked up a stick and broke it. He touched the smaller piece to the control mod and threw the other away. So far, so good.

Feeling like a fool, Zoll drew the planetary system and pointed to the sun and to his diagram. They whistled. They understood. The

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bright-eyed woman put her finger on the fourth planet and stamped her foot. They were a smart bunch of geriatric cases. The others stamped their feet. The woman was the youngest and she was at least seventy. Zoll himself felt as old as the antique spaceships in disrepair and collapse at the edge of the field.

And now, the moment of truth.

He drew a picture of the crossed-dumbbell ship that had scuppered him. He drew the fleet of crossed-dumbbells his detectors had picked up beyond the seventh planet. Zoll had believed his weaponry was better than the galactic standard, but the dumbbell wiped him out of space with a missile that penetrated his defenses like a bowling ball rolled at a matchstick castle. The control mod was a fragment among other fragments and the scout dumbbell ignored the debris. The little aggie drive had landed him here.

The old men and women were silently weeping.

Weeping and wailing and gnashing of teeth? Zoll sat down abruptly when his knees refused to support him. "But we ain't got no teeth, oh Lord," he murmured. He stared wearily at the old men and women in their varicolored sheets weeping under the open sky. "And the Great Voice replied, 'teeth will be provided'."

He had done his duty. He had given the warning and it was understood. He was bone-weary and his mind was at loose ends, like a drowsy dog snapping at flies.

He should be thankful for small favors. At least these people did not subscribe to the general galactic philosophy: "Clout any stranger." Earthmen went into space with a heavy burden of loose thinking about Tolerance and Good Interspecies Relationships. The first ten starships never returned. The next ten were dispatched a light minute apart and the Eriadne got seven of them like dominoes in a row. The other three went in all directions and one got home. Then there was more thought given to weaponry and less to Mutual Understanding. You had to deal from strength to establish equitable relations with any stranger. The price of admission to space was an ability to fight on equal terms with other humans, Arachnids, the Silicon Beasts, Chloriners or the Soggies. The universal constant was Don't Bug Me Jack, but the black dumbbells were a wild factor, like a bazooka in a bow-and-arrow war.

Zoll started when the old redhead patted his shoulder comfortingly. He had nearly given her a karate chop to the mazard. He got to his feet. All the old folks were talking into their reticules and a little cynically, he noticed that he had begun to hope again. Maybe this was not entirely a retrograde race. While the people were old,

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their clothing was not, and their reticules seemed to be technologically sophisticated. Zoll was an outstandingly successful Pointman because he was cat-quick to nuances of behavior: they were not resigned, they were not afraid and their melancholy at the news of the crossed dumbbells was as if they were saying good-bye to an age, making nostalgic farewell to a condition they had loved. Zoll rubbed his face and scrubbed his waved gray hair with his hands. Now that was a preposterous intuition.

The old woman joggled his elbow. Her eyes were large and amber and very kind. She led him to a flattish craft that had silently landed behind him. There were benches around the perimeter and when the geriatric ward was aboard, it slipped off into the sky.

From force of habit, Zoll noted they were running north, parallel to a range of mountains. There was an oddly star-shaped lake. He could find his way to the spaceport again. Then he shut his eyes. He consciously abandoned interest in the scenery. He was stuck here for the rest of his life, as long or as short as the dumbbells would make it. There was no use in fooling himself. He had come to the end of the road.

He was a wealthy man on Earth with all the pleasures to command: the hidden home built under a cliff on the bosky creek that ran into the Grand Canyon, the apartment he kept in New York, the wooded range he owned in Oregon . . . the lovely women . . .

Peter Zoll dozed.

Cartish & Richards would write him off sadly. The odds had caught up with him. Actuarial figures showed that for every ten departures there were 8.370 returns. His ship had cost $48 million and he had paid for it a hundred times with ivory and apes and oranges, with wine and furs and jewels and their equivalents in interplanetary trade. Cartish & Richards was one of the first companies formed by an international conglomerate to exploit space when it became obvious that governments were even more incompetent off Earth than on it. The companies used every physical and psychological test possible and then gambled $50 million on a ship, a cargo and one man to see if he was lucky. His wages were one percent of the net return as long as his luck held out, and Peter Zoll had been luckier than most. He groaned in his sleep.

Zoll was muzzy when he woke with a sense of desolation, a feeling of irreparable loss; the money and prestige and beautiful women were gone. All right. But so was the most exciting and satisfying way of life known to man.

The old woman shook him again and he followed her down the ramp to a wide rock ledge. There were many fliers coming in loaded and going empty. Crowds of old

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people were trooping into a rock portal in a mountain face. To be a senior citizen here you would have to be two hundred years old, but there were no wheelchairs, or canes, or prosthetic devices in sight. The great tunnel brachiated again and again. His guide led him through a curved passage deep in the rock that led to a vast hollow sphere with upholstered platforms covering the entire surface. When they sat, the cushions shifted under Zoll in a pressure response to conform to his body.

He wriggled uneasily. An old, half-forgotten excitement was seeping into him. In deep space, wonders pall like chocolates in a candy factory. He had seen the curvilinear cities of the Eriadne from the Trade/Prison tower, he had bartered peacocks with the Soggies for emerald coral, he had sat in space armor and watched Spican magic, he had stolen precious pods from the Little People's world, and watched men in a unity of minds make God walk and blot out the stars on the grassy plains of Jondril.

This world was not subject to easy explanation. In a retrogressive society you do not have a taxi system that works or a meeting place that blandly ignores enormous technological expertise in favor of simplicity. Were their weapons equally unique? He wondered what these people wanted, what kind of ivory and apes he could supply in

With a magazine like Analog, you would, of course, expect us to use computers for handling subscriptions.

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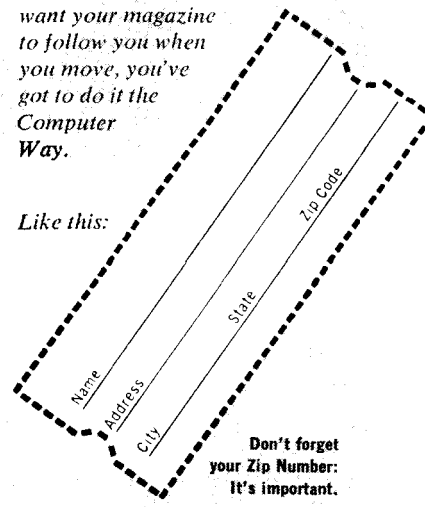

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exchange for a little engineering information and perhaps a working model of the assembly ball.

The murmur of voices died away. The bright-eyed old woman took his hand and squeezed it to direct his attention to the center of the hollow sphere. A point of light appeared there and grew larger. It was his control capsule and it dropped through the sky to land on the incredibly dense surface of the spaceport. The battered lock opened and a man stumbled out. Zoll felt sorry for the hollow-eyed, gray-skinned scarecrow who waved his arms and staggered toward the eight people who came out of the forest. Zoll thought of himself as a lean and elegant figure with an air of world-weary competency; he watched his antics with the drawing pad and his arm-waving at the sun with acute malaise.

He escaped these thoughts in a familiar pattern: how does this thing work? Did the Old Senilities a quarter of the way around the globe see this distasteful clown from a worm's-eye or from a bird's-eye view? He suspected they saw it eye high just as he did, but what were the loopholes in the laws of optics that allowed this?

When the shoddy earthman sketched the dumbbells and slumped to the ground, Zoll watched him with a return of the impatience that had driven him earlier.

What were all these old idiots doing here in a ball buried in a rock? By God, they'd better start making bows and arrows or binding spearheads to shafts instead of enjoying weepy nostalgia. Passive resistance is a ploy on the goodwill of the opposition and Zoll did not believe the dumbbells had a reservoir of the milk of human kindness —they made it into cheese and used it for bait.

In the best traditions of drama, the full dimension full color moving-picture show went on to something more serious after the comic episode. There was a look at the crossed dumbbell that had wiped him out, and a breathtaking zoom to the great fleet of dumbbells approaching the planet.

This was more than mildly spectacular and should have engaged his full attention, but Zoll noticed an extraordinary reaction in his innermost being: he was spiritually engaged like a fish hooked on a very light line. He had no more accurate words to describe the feeling. He was inexorably involved with whatever was going on. With this awareness, he offered some resistance to the drawing force and found that the light leader and line were indistinguishable from a bridge cable. He was inescapably bound into the purposes of the geriatric sphere.

With this understanding, he became aware of a totally foreign artifact in the center of the spher-

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oid. The people around him had the same crystal-clear double vision. They were at once watching the dumbbell fleet grow larger, and watching the artifact perform its function on what Zoll interpreted as a different order of reality. He had never had the kind of eye to see beasts or men in clouds; this thing was a functioning mechanism and it looked like a sweet potato. The coppery part of the surface convoluted and the striped section crawled slowly away: it was a kidney with kidney stones in orbit around it. At the same time, with equal clarity and definition, he swooped through star-scarred space toward the great black crossed dumbbell fleet.

There was a third level of reality. His ageless woman at his side looked at him compassionately, or was it pity in her amber eyes?

As abruptly as if he had stepped from black shadow to blinding sunlight, time was abrogated.

Simultaneously, these things happened:

He realized that the artifact was a relic of a vanished race. It was at once a test and an *in extremis* weapon of absolute power. Its effect enveloped the solar system. It acted on the user as it did on the target. Sampson faced the same dilemma when he pulled the temple down about his ears. The price paid for its employment was putting in hazard everything earned in a lifetime, including life itself. Its action was an assessment—of sorts—against an unknown standard. It acted directly and personally on every intelligence within range.

At the same melded instant out of time, Zoll saw the fierce Avian warriors aboard the dumbbell ships, hawkheaded creatures of xenophobic malevolence, diminish to fledglings or eggs or nothing.

The monstrous correlation between age and undefined wisdom was instantaneous.

Peter Zoll looked about him in this simultaneous moment. There were children on the couches and a very few young men and women. Next to him was a seven-year-old girl with heavy auburn hair who watched him with grave eyes while he cooed and spit and bubbled. Bothered no further with metaphysical machinery, he gurgled and put a big toe in his mouth. ■

ENGLISH IS A SUBTLE LANGUAGE

Anyone who thinks that "fulsome praise" is desirable,
is either ignorant, or guilty of mumpsimus.
And if you don't understand—try an unabridged dictionary.
Neither word means what most people think they do!

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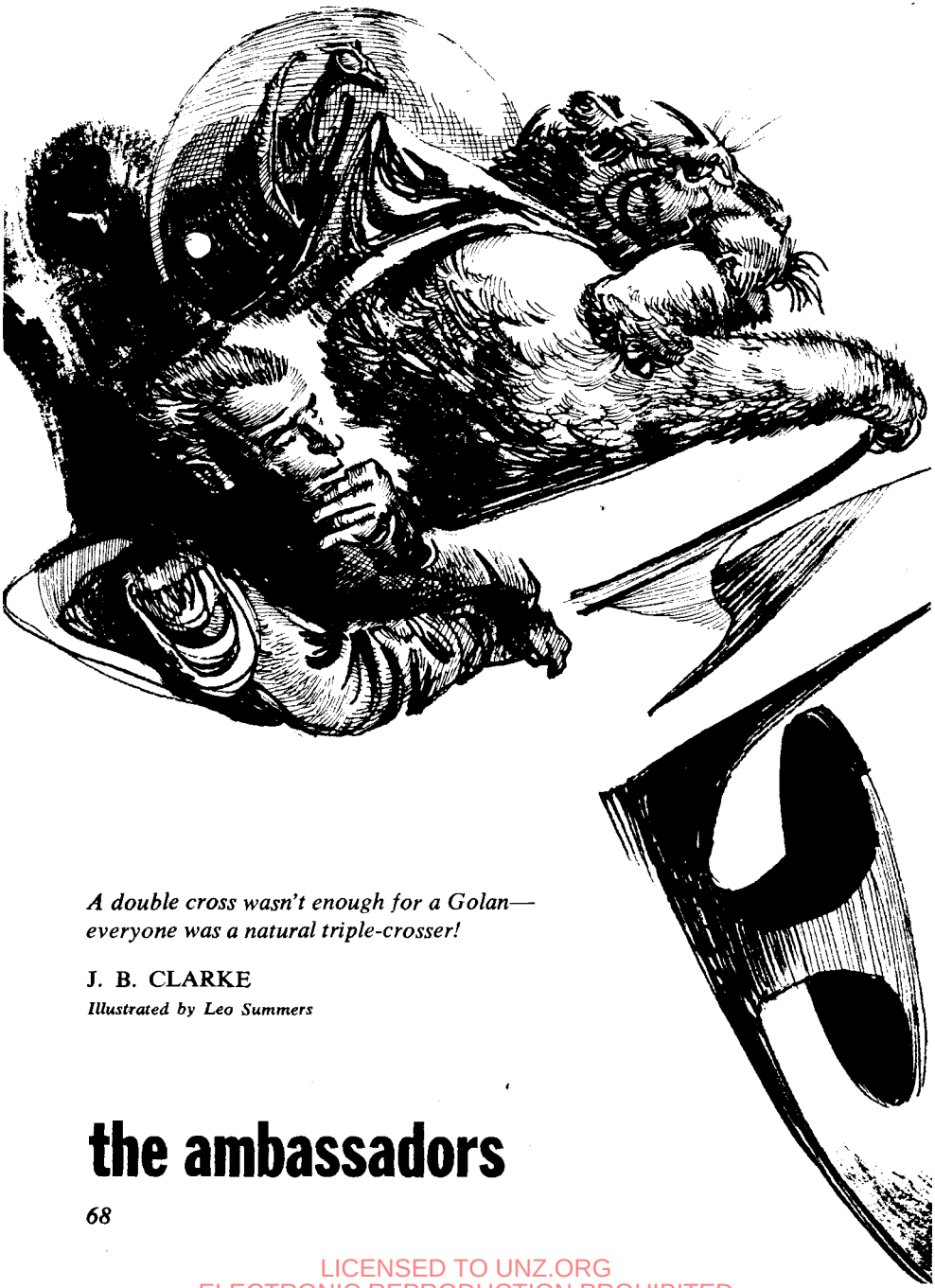

A double cross wasn't enough for a Golan—everyone was a natural triple-crosser!

J. B. CLARKE

Illustrated by Leo Summers

the ambassadors

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"Greetings, Director Hinesdale."

"Greetings . . . er . . . Grastyk?"

"Psormetyk. Grastyk is my sixth descendant by Brood Mother Vernatak."

"My humble apologies. We Terrans find it quite difficult to distinguish between individuals of your species."

"A problem we are accustomed to," the lizardlike being from Xtral said dryly. "However, I have not made this expensive call to discuss trivia."

The Terran quickly hid his amusement behind a mask of smooth imperturbability. "Of course not. Please continue."

The Xtralen's triple-eye system stared stonily at the director of Special Eight. "I am located on . . ."

The viewscreen abruptly broke into wild patterns of coruscating color as interference scrambled the signal somewhere in the light-years between. It was about ninety seconds before vision returned to show a still of three beings in weirdly jeweled apparel.

". . . From somewhere west of the hub," Psormetyk's reedy voice was saying, "claiming to represent a civilization of even greater antiquity than the Web. They wish to present themselves before the Grand Council at Galacenter as official representatives of The Golan Federation of Stars."

"Please repeat that," said Hinesdale. "There was int . . ."

The broad, goggle-eyed head of the Xtralen reappeared on the screen. "You will, of course, take appropriate measures to check the credentials of these beings. And since this may be an event of unprecedented importance, I suggest you give this matter utmost priority."

Hinesdale took a deep breath. "I will need authorization," he said firmly, "and also more information before . . ."

But he was talking to thin air. Even as he spoke, the screen blanked and then went dark as the null-signal circuits cut off the power.

The director swore angrily. "Did you get all that?" he asked.

"Yes, sir," the computer said.

"Who is our current ambassador to The Galactic Web?"

"Ivor Ward Hengen."

"Hengen, huh?" Hinesdale considered a moment, then pressed a button on his desk.

"Carnes here," said a voice. "You want me, Jim?"

"You're darned right I do!" Hinesdale released the button. "Computer."

"Yes, sir."

"Call Hengen on S-Eight priority. Play him a complete transcription of my conversation with Psormetyk. Then put the ambassador through to me."

"Yes, sir."

The door opened and the deputy

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director of Special Eight came in. Of medium height and a little inclined to stoutness, Elward Carnes could have passed as a prosperous office manager. But the hint of toughness in his gray eyes tended to belie the apparent innocence of his round face.

The newcomer lowered himself into a chair. "Something up?" he asked interestedly.

"Very much so," the director replied. "I think." He gestured towards the screen. "Computer, play it again, please. But omit the interference sequence."

Carnes watched as Hinesdale's one-sided conversation with the Xtralen was repeated. When it was finished, he let out his breath in a long, low whistle. "You know, when Terra came to the notice of the Web, I thought *that* event enough for one lifetime. But the Web itself coming to the notice of *another* civilization?"

Hinesdale smiled sourly. "I wouldn't get too excited about it, not yet anyway. After all, we have only been asked to look into the unsubstantiated claims of three mysterious aliens. And it is our specialty, don't forget . . . the supposed ability to sniff out skulduggery in all its nefarious forms. So let us not lose our cool, Mr. Carnes. At the moment, Psormetyk only wants our noses."

Carnes grinned. "Rebuke accepted and noted, Chief. But why In blazes didn't he give you a chance to get a word in edgewise? Damnit, he caused you to lose half the message."

"His people are like that. If Psormetyk would have had to spend one more credit on that call than he considered necessary, he most likely would have had a nervous breakdown. Anyway, I've put in a call to Ivor Hengen. Perhaps he can fill in the blanks."

"Hengen? Our ambassador in Galacenter?"

"He's the one. Being in the center of things, he may have heard something. But until that call gets through, let's look at that picture again."

Again, the image of the three aliens appeared on the screen. Other than the fact that their garments were heavily jeweled and were of wildly clashing colors, the beings were obviously of three different species. Two were vaguely humanoid, the third resembled a huge, errect-standing lobster.

"At least we can assume they do represent some sort of interstellar organization," Carnes commented as he studied the picture. "No two of those could have been spawned on the same planet."

"Perhaps," Hinesdale said noncommittally. He pointed. "What do you make of those flattened domes in the background?"

Carnes walked over to the screen and examined the scene closely. "Jim, I think I've seen things like that before. Unless I'm

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mistaken, those are Trangen cell houses."

"Exactly what I thought. And since the Xtralens have long traded in the Trangen sector, it's reasonable to assume that Psormetyk's call came from there."

"But that must be at least fifteen hundred light-years from here." The deputy director spread his hands wide. "No wonder you had ultra-wave interference!"

Placing his hands behind his head, Hinesdale leaned back till his chair tilted dangerously. "That sector would be the logical point of entry for anyone originating west of the hub. Now I wonder if . . .?"

"Contact has been established with Ambassador Hengen," the computer announced. "Will you take the call, Director Hinesdale?"

"Immediately." The director resumed a businesslike posture behind his desk, then turned to the screen just as the image formed of a worried-looking man in the dark blue uniform of Terra's diplomatic service.

"Director Hinesdale?"

Hinesdale nodded. "Your Excellency."

The other waved his hand irritably. "Forget the protocol, please. A matter such as this needs communication in plain words."

"Agreed," said the director, pleasantly surprised at Ambassador Hengen's no-nonsense attitude. "What can you tell me from your end?"

The ambassador frowned. "Only rumors. But they prove someone on the scene must have contacted someone here, otherwise I would have heard nothing. I'm only thankful that your Xtralen friend decided to contact you directly instead of going through regular channels. Your organization might need that extra time."

"Special Eight has not officially been called in on this matter," Hinesdale pointed out. "Ambassador, you know the procedure."

"To blazes with procedure!" the diplomat snorted very undiplomatically. "Hinesdale, if those three are not what they seem, they're not going to wait around while we worry about procedure or any other bureaucratic nicety! However, I can guarantee that S-Eight *will* be assigned to the case, and that no one is going to give a damn if you jump the gun a little."

The director hesitated only a moment. Then he nodded. "O.K. I'll have someone on the next ship out of here. But what about those rumors? Do they mention, for instance, where Psormetyk was when he made the call?"

The ambassador shook his head. "Not particularly. But one delegation here has become noticeably active during recent hours. In fact, they are behaving as if they had just been told to prepare for important visitors."

"Which delegation?"

"The Trangens."

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Hinsdale's sense of pleased vindication must have expressed itself on his face, because the ambassador immediately asked:

"It rings a bell?"

"You could say that."

The ambassador nodded. "Then the matter is obviously in expert hands. Incidentally, who are you assigning to this case?"

"My deputy director. His name is Elward Carnes."

"*Thank* you very much," said Carnes dryly as soon as the screen was safely dark. "I always did like plenty of notice."

Hinesdale merely grinned. He opened a drawer in his desk and took out a legal-looking volume. "Have you ever been to Galacenter?"

"Not even as a tourist."

The director pushed the book across the desk. "Then this will take care of those dragging hours on the ship. It's a primer on Web protocol. And you'd better read it, believe me . . . that is, if you want to avoid embarrassing conflictions with a lot of weird customs!"

Carnes reached for the book, hefted it. "Wouldn't it be easier if Terra just seceded from the Web?" he asked with dismay.

GALACENTER: Administrative heart of The Galactic Web. Located on fourth satellite of Querus II. Includes legations of 2316 member worlds (as of Prime Date 6038/206), and professionally staffed government departments. Center of complex is Place of Grand Assembly. This unique arena contains three thousand environmental bubbles, each bubble permitting up to three members of any delegation to function in an environment precisely matched to their home planet.

SPECIAL EIGHT: Agency created by order of The Grand Assembly after Terra was admitted to the Web on 6019/103. Exclusively staffed by Terrans, S-8 utilizes a talent peculiar to that race: an ability to discern facts far beyond the obvious. First used to uncover the illegal manipulations of the Rulgan Imperium, this agency now investigates and approves all applications for Web membership. It is also used to investigate matters which affect general Web policy. The existence of S-8 gives Terra a voice of unusual influence within galactic councils, though apparently to the benefit of all parties.

From Galactic Web Manual:
798769.987.

The Terran ship arrived within the cratered wall of Galacenter just as the huge, Jupiter-type primary was settling below the horizon. As Carnes waited for the ship-to-ground links to be established, he went up to the observation deck and looked out on the endless array of structures which

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filled the crater's floor. The complex itself, he knew, was far below the surface. But the original science labs, docking facilities, living domes, and all the other manifestations of an age long past, had been lovingly preserved as authentic marks of history. Scattered among the structures like ancient monoliths, the hulls of tall ships dully reflected the light of the small star which had given this system birth.

"Link established," the P.A. announced. "Passengers may now disembark."

Carnes turned away from the magnificent view with some reluctance. But magnificence of a different kind astonished his gaze when, a few minutes later, he stepped out of the grav lift into a fantastic, glittering forest.

"Mr. Elward Carnes?" asked a voice.

"Er . . . yes." The S-8 man turned, saw a young man standing by a small electric runabout.

"My name is Kell," the young man said. "I'm to take you to the ambassador as soon as you arrive."

"Thank you." Hardly able to take his eyes off the surrounding splendor, Carnes slid awkwardly into the vehicle's passenger seat.

As they began to move off, the young man grinned and said helpfully: "Don't let it embarrass you. It affects all new arrivals this way."

Carnes gestured. "But what is it all?"

"Structural columns. And grav lifts, of course. The psychedelic look originated with an artist from Sensen Four. Wild, huh?"

"How far does this place extend?"

"Across the whole floor of the crater. But it's split into fourteen separately sealed sections, each with a different atmospheric content. None of the sections exactly like home for everybody, of course. But they claim there are only three races whose members have to cross this concourse in their own environmental capsules."

Kell steered the runabout down a ramp into a wide, brightly-illuminated trafficway. This time, Carnes's visual senses were suddenly assailed by *colors*—colors of every shade he had ever imagined, some beyond imagination. The beings who thronged the trafficway—some in vehicles, others moving with the natural locomotion peculiar to their kind—added further to the utter strangeness of the scene. Carnes had been on many worlds and had seen many races, but never had he experienced such a sense of the bizarre.

"So what mad artist was responsible for this?" he asked incredulously.

"A computer."

"I beg your pardon?"

"A computer," the young man repeated patiently. "To avoid any suggestion of bias, it was decided that none of these trafficways

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should remind any entity of his home world. So a computer was fed with data concerning every planet in the Web, and then was instructed to come up with a design which would include none of it. This is the result."

Carnes grimaced. "Frankly, I've seen places like it before," he commented. "In nightmares."

Finally ushered into a conventional, Earth-style reception office, Special Eight's deputy director felt an almost overwhelming sense of relief. He was greeted by a pert young secretary who immediately escorted him into the ambassador's inner sanctum. It was a big, comfortable room lined with "windows" which opened out to holographic reproductions of mountains and sky.

The ambassador rose from behind a cluttered desk. "Mr. Carnes, I can't say how glad I am to see you here," he said warmly. "I was beginning to think you would never make it in time."

Carnes blinked. "In time for what, Mr. Ambassador?"

"In time for the Golans. You knew they were coming to Galacenter, didn't you?"

Carnes sat down. "Of course. When are they due?"

"In about"—the ambassador glanced at his watch—"three hours. So you can understand why I had you brought directly here. If you want to freshen up, there is a bathroom through that door. I'm afraid it might be a while before we get you to your quarters."

"Well, I . . ." Carnes shrugged helplessly. "Frankly, I expected to get here at least a couple of weeks before they did, especially considering the greater distance they have to come." He paused. "They *are* coming from the Trangen sector, aren't they?"

Ambassador Hengen nodded. "The Golans landed on Rhis Four, one of the Trangen colony planets. Apparently, the local authorities were so highly impressed by the outsiders, they assigned one of their ultra-warp craft to bring them to Galacenter. Since we had no way of knowing that, we let you come in on a scheduled ship. Otherwise, of course, one of our fast scouts could have got you here weeks ago."

"Three hours," said Carnes gloomily. "Certainly not much time for pre-planning." He looked up. "By the way, Mr. Ambassador, why a Trangen ship? Don't these Golans have a ship of their own?"

"They have a ship. But not one of their own." The ambassador smiled at the other's look of bemused incomprehension. "You see, the Golans came into the Web aboard a patched-up Rhodan probe ship, one which had crash-landed on one of their frontier planets some years ago. They claim that all the Rhodan crew eventually died of their injuries, but not

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before they had disclosed the existence of the Web. Anyway, the Golan Federation decided we were substantial enough to be taken notice of, and so sent their ambassadors to us."

"But why on the Rhodan ship? Why not one of their own?"

"Because they felt this was not the time to introduce us to a product of their advanced technology. Apparently, we of the Web are not ready for such"—the ambassador coughed—"things."

"Oh, brother!" said Carnes with feeling.

The ambassador smiled thinly. "It does make one a little sick, doesn't it?"

It was easy to feel anger against such arrogance. But was it? Were the aliens simply expressing the logic of a much higher order of civilization? Or were they playing a much deeper game, one which only minds from a queerly different mold could understand? Whatever their motives, Carnes suddenly had the feeling he was faced with the toughest assignment of his career.

Meantime, humankind deductive reasoning would have to do. There was the odd business of the Rhodan ship, for instance . . .

"Doesn't it seem rather strange to you," he asked the ambassador, "that the Rhodan ship was repairable? Even though the crash was severe enough to kill off its entire crew?"

"The standard Rhodan vessel is mostly drive unit," the ambassador explained, "with a separable crew compartment at the front end. A control failure apparently caused the ship to flip nose-over just before touchdown, and it hit like this . . ." Ambassador Hengen's fingers landed hard on to the desk top. "The crew compartment was crushed, the rest of the ship relatively undamaged. So our Golan friends simply built themselves a new crew compartment. Is that logical enough for you?"

"Too damned neat, if you ask me," Carnes commented sourly. "All this, I presume, was the Golans' own explanation?"

"Naturally. As told to the Trangens who in turn told us via ultrawave. Your job, as I presume you already know, is to confirm the authenticity of these Golan ambassadors and their story."

"Officially?"

"Officially. Your assignment was confirmed by the Grand Council while you were on your way here."

"That's something at least. Do I have a cover?"

"A beauty." The ambassador smiled triumphantly. "You, Mr. Carnes, will be attached to the Golan party as councilor and guide during their stay here. You will see to their comfort, escort them around the complex, and generally make yourself as indispensable as possible. Since they officially requested such a guide, all of us on the Council thought it too good an

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opportunity to miss. Of course, we expect you to take full advantage of the situation to accomplish your real task. But I must warn you . . ."

Carnes's eyebrows lifted quizzically. "Of what, Mr. Ambassador?"

"This is a matter of diplomatic delicacy. I, therefore, strongly suggest that you work on your own. That means you stay away from other Special Eight people who may be operating here, and that *if* you need help, you contact me first. I hope I make myself plain."

Elward Carnes nodded. "Entirely. But I will not promise anything. In my job too much depends upon circumstances."

"Agreed." The ambassador pressed a button on his desk. "But now you must be briefed . . ."

The reception of the Golan representatives was a brilliant occasion. Hot and uncomfortable in his borrowed diplomatic blues, Elward Carnes stood amid a group of dignitaries in the concourse area eighty feet below the still hot drive tubes of the Trangen ultrawarp ship. Circled at a discreet distance, beings from a hundred different worlds waited expectantly among the glittering columns, the voices of those who used speech echoing strangely.

"I wish they'd hustle and get this over," the S-8 man muttered under his breath. "This suit is giving me a rash."

Ambassador Hengen heard him. "Thank the stars that is your only problem," he whispered back. "After all, the Golans use speech and have already become fluent in intergalacta. And they are oxygen breathers. Can you imagine what it would be like if they communicated by light patterns and breathed ammonia?"

Carnes grimaced. "I would not be here, in that case. I'd be—"

"They're coming," the ambassador warned.

Accompanied by three blue-furred Trangens who immediately stepped respectfully aside, the Golans emerged from the grav lift and halted just before the waiting dignitaries. As Gohanne-Sra-Dyn—the Arcturian senior member of the diplomatic corps—reedily intoned the ritual greeting required for such occasions, Carnes took the opportunity to study the three beings closely.

The nearest one immediately reminded him of the legendary Ichabod Crane. It had incredibly thin, multi-jointed arms and legs; a ridiculously small torso; a round head topped by two flexible eyestalks, and a restless air of movement which suggested an excess of barely suppressed nervous energy. The other humanoid was in many respects the opposite. Short, squat, and with a dome of a head attached to its body with no visible sign of a neck; its large intelligent eyes were deeply recessed below huge, protruding eye ridges.

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The third Golan ambassador was the strangest of all.

About eight feet tall, its thick gray exo-skeleton supported a creature which was lobsterlike, erect, and awkwardly mobile on three stumps of legs. Tentacular arms extended in two groups of three from either side of the armored body. Wondering what sort of environment had stimulated this odd deviation from the universe's basic humanoid pattern, Carnes nevertheless sensed a certain logic in a being which possessed both brains and such a formidable natural protection. It would, he imagined, largely free it from the usual survival conflicts, perhaps permitting the development of a gentler mentality.

All three aliens, the S-8 man then noticed, had discarded the garish garments he had seen them wearing on Hinesdale's ultra-wave screen. Instead, they were attired in leatherlike tunics adapted to their individual shapes, each with a barred circle inscribed in brilliant green on the front.

Finally, Sra-Dyn was finished. As the old Arcturan stepped back, the short Golan said:

"I am Zuss." One arm lifted ponderously and pointed at Ichabod. "Ruar." Then, as he pointed at the lobster. "Cembar."

"Now it's your turn!" Ambassador Hengen whispered into Carnes's ear.

Carnes took a deep breath, moved forward. "I am Carnes of Terra," he announced. "I have been assigned to attend your excellencies during your stay in Galacenter."

The three aliens stared at him. Then, an amazingly human chuckle came from the spindly one:

"A pleasant prospect, colleagues," Ruar said. "This small entity sounds quite intelligent."

There was a stirring of Cembar's arms. "Then we accept." The alien's voice rasped harshly from behind a series of overlapping plates high on the front of its carapace. *Great Stars, a speaker grille!* Carnes marveled, though he firmly suppressed the unbidden thought behind a polite mask of attentiveness.

"Carnes of Terra," Cembar continued, "will please conduct us to our quarters."

There was no hint of inflection in the deliberately spoken words, so Carnes was not sure whether they were intended as a request or an order—though he suspected the latter. But the obvious desire to cut the formalities short so echoed his own sentiments, that the Terran felt little resentment as he bowed acknowledgment and said:

"I will take you there immediately. Will your excellencies please follow?"

Being himself new to Galacenter, Carnes felt a slight twinge of conscience as he led the Golans towards the ramp. But the honor guard of tall Mecedans who marched either side had been well briefed. Within minutes, he and the Golans were

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deposited in a large suite of rooms which lay only four levels below the Trangen landing facility. As soon as the door was closed, Carnes gestured towards the openings which led from the entrance lobby.

"These rooms have been furnished according to specifications transmitted to us by your former hosts. Should anything prove unsatisfactory, the necessary adjustments will be made immediately."

The joints of his body armor clicking audibly as he moved, Cembar went to one of the openings and looked in. "Zuss." Then he went to the next opening. "Mine." The large being turned and came back towards them.

"The Terran must now leave us," Zuss said.

Without moving from his position which was at least four feet away, Rear reached out and laid a skeletal three-fingered hand on Carnes's shoulder.

"Terran, we must prepare for our first meeting with your Grand Council. At the appropriate time, may we expect you to conduct us to them?"

"Of course." Carnes pointed. "The small button by the side of the viewscreen will instantly connect you to my quarters. You can summon me when you are ready."

"It is done." The two eyestalks retracted, came together and bent down to touch the Terran. The effect was disconcerting: an intense, concentrated stare which felt like a visual dissection. Carnes backed away, bowed, and then quit the Golans' presence as hurriedly as he thought diplomatic protocol would permit.

Ambassador Hengen was in his office. He rose anxiously when he saw the expression on Carnes's face. "What happened?"

"Don't rush me, please," Carnes said, sinking gratefully into the nearest chair. "I feel like I've been . . ." He looked up. "Do those people practice telepathy?"

The ambassador laughed. "Has the skinny one given you the eye treatment?"

"You know about that, huh?"

"It was in the Trangens report. Apparently it's strictly a visual effect, especially suggestive to those who can't wave their eyeballs around like she does. Anyway, Carnes, you know as well as I that telepathy has never occurred except between individuals of the same species."

"Not yet, maybe. But you never know when . . ." Suddenly, Carnes stared. "Did you say, *she*?"

"You didn't know that, either?" Ambassador Hengen grinned. "Well, she had no qualms about admitting her gender to the Trangens. I understand she also does most of the talking for the group." The grin grew wider. "Obviously, some feminine characteristics are universal."

"I suppose so." Carnes shook his

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head ruefully. "It's damned easy to forget that most life in this universe is bi-sexual. So what about our other two Golans? Are they ladies, too?"

"If they are, they've not let on." The ambassador hesitated, added: "I guess that is one of the things you will have to find out."

"Well, you're still way ahead of me in the information department," Carnes said moodily. He slumped deeper into his chair and stared at a spot somewhere between the toes of his shoes. "You know, there is one odd thing about these people which bothers me."

"I would expect a lot to be 'odd' in beings from a strange part of the galaxy," Ambassador Hengen commented. "So what have you got on your mind?"

Carnes considered. "Perhaps it's best put in the form of a question. If the Web were sending representatives to a newly discovered civilization, would we attire them in a common uniform?"

"Only if they were of the same species, which would be extremely unlikely," the ambassador chuckled. "For instance, if you were one of them, would you consent to the wearing of a Rigan *Hrola?* Or perhaps one of those living leaf things they wear on Vrest Two?"

"The Golans wore a uniform."

"They did?" The ambassador stared at the other, startled. Then: "By jove, you're right. They did, didn't they?"

Carnes lifted his eyes and studied one of the mountain scenes which decorated the walls of the office. It was a nostalgically beautiful picture of a graceful, cone-shaped peak soaring against a background of lesser peaks and clean blue sky. Would there ever be a time when that would be threatened, he wondered? Was interstellar war really that impossible?

The ambassador mused thoughtfully, almost echoing Carnes's own thoughts: "A military dictatorship, perhaps? Could a single totalitarian government hold sway over hundreds of stellar systems; enough to put vastly dissimilar peoples into a common uniform?"

"It would imply power, or an instrument of power, way beyond anything the Web has known." Carnes's brow furrowed as he considered this new, fearful possibility. "The 'Golan Federation of Stars'," he quoted. "Perhaps Golan is the world which is the seat of the dictatorship. Have any of those beings admitted to being from such a planet?"

"Not that I know," said the ambassador. "But while we are on the subject of dress, what about those weird outfits they were wearing when Psormetyk sent that message? What would you call those? Full dress uniforms?"

"Hardly." The Special Eight man grimaced and shook his head. "They were garish, they were similar, but I don't think they were uniforms.

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But there is an alternative which has just occurred to me—and that is that these people represent a federation so old that even the differences between its member races are beginning to disappear. They can never become physically alike, of course. But in thoughts, speech, and even in dress, they may be closer to each other than even the peoples of our own planet."

"But that is another kind of power," Ambassador Hengen said calmly. "The power of a civilization vastly beyond our own; benign, perhaps—but overwhelming. Either way, it certainly confirms why they did not come to the Web in one of their own ships. The advancements contained in such a vessel . . ." The ambassador thudded a clenched fist on the top of his desk.

"Carnes," he said tightly, "we've got to know what these people are!"

"How many planets are there in your federation?"

"Six hundred and thirteen," replied Zuss. "There are also nine hundred and seventy-one associates."

"What are 'associates'?" asked Skorva, the elderly Spican who was the current chairman of The Grand Council.

"Planets which have attained interstellar capability, but which are still within their probationary time period."

"Which is how long?"

"Eight hundred and sixteen of your standard years."

Seated behind the Golans, Carnes almost whistled with amazement. Eight hundred years only a probation? That civilization must be really *old!*

The chairman had a whispered conversation with the subchairman, who, for this particular occasion, happened to be Hengen of Terra. Then:

"What is Golan?" asked Skorva. "A planet?"

"We do not know." This time, it was Ruar who answered. "Perhaps once, there was a race which founded our federation. But that event has long been lost in prehistory. We are now administered from a world we call Exor."

"You are a citizen of this . . . 'Exor'?"

"I am."

"Is *your* race, then, the one which administers The Golan Federation?"

"No single race administers The Golan Federation," Cembar, the lobster-being interjected harshly. "All responsibilities are equally shared."

A defensive reaction? Carnes immediately wondered. Then he dismissed the thought. Not only did Cembar always sound harsh—his vocal cords seemed incapable of any other sound—but the imperturbable Golans seemed well schooled in what humankind had long known as "poker face."

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Perhaps because he had also reasoned along similar lines, the Terran subchairman asked: "May I intervene?"

Skorva nodded his white-furred head. "Of course."

Hengen then turned his attention to the three Golans. "Please forgive our doubts, but we find it difficult to conceive of a multiracial federation governed from a world indigenous to one of its member races. Ruar is a citizen of Exor; Exor is your administrative world. Ruar's people, therefore, possess advantages denied to other races . . . and that, in our experience, is a situation rarely conducive to political stability."

Ruar nodded, her facial features contorting into an expression which could have meant anything, but which those who witnessed it interpreted as a smile of condescending amusement.

"We understand your point," she told the Terran. "But you see, The Golan Federation evolved beyond politics long ago. To us, it is an irrational pastime, and dangerous."

She paused, and the expression on her face became even more pronounced. "I have told you I am a citizen of Exor. But so is Zuss. So, also, is Cembar."

How are the mighty fallen!

The hackneyed old platitude came easily to the mind of Elward Carnes as Ruar coolly revealed the existence of a civilization against which the Web seemed as faction ridden as the United Nations of old Earth. In the silence which followed her statement, it was obvious that most of those present were experiencing the same humbling moment. But Enten, the birdlike Wheverite in his dimunitive chlorine bubble, displayed a surprisingly practical turn of mind when he asked:

"If you are so far beyond us, why are you here? What have we to offer that you have not already discarded—long ago—as obsolete?"

"Much, I think," the Golan replied mildly, "if only because the ways to true knowledge are uncountable. Your civilization is undoubtedly evolving along a different road than that which The Golan Federation has already traveled, and it is that *difference* which we suggest can be of mutual advantage. We do not, of course, propose to trade you our more advanced developments. But we will gladly exchange that which we consider equivalent to your level of progress."

"What, for instance?" chirped the Wheverite from the speaker-box atop his bubble.

Ruar gestured. It was a graceful movement; one, long, multi-jointed arm uncoiling easily from her side. "We have precision force fields which could contain your atmosphere as effectively as that bubble, little one. You would be able to move through these halls as freely as your oxygen-breathing colleagues."

She then turned her attention to

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the chairman. "I have observed that the floor of the crater above this complex is supported by huge beams and countless columns. However, I could show you a suspension system which in turn was shown us by a minute creature on one of our planets. If you used such a system, this whole vast area would look as if it were supported on air."

And finally, to the Terran deputy chairman. "I understand, *Retka* Hengen, that though your race builds the fastest ships in the Web, their ultimate capabilities are restricted to emergency situations."

Hengen nodded. "True. Beyond a certain energy level, crystallizing problems occur which can only be corrected by a major refit. You know of a remedy?"

"I do." Ruar's eyestalks drew hypnotically together. "Would your technicians be interested in the technique, Ambassador?"

The deputy chairman cleared his throat nervously. "Each of the things you mentioned would be of undoubted value to all members of the Web. However, what would you ask in exchange?"

"We do not know," was the frank answer. "We must first study your civilization before we recognize that which would be of most value to us. That, of course, will take time."

Ruar hesitated a moment.

Sensing that the Golan was debating a further possibility within her mind, Skorva prompted:

"You have a suggestion?"

"Give us one of your ships. An amalgam of much of your most advanced technology contained within one hull, it would be an excellent indication to our scientists of the Web's current state of development. It would also be an interesting reminder of what *we* did, long ago."

The old chairman stirred. "But you already have one of our ships," he pointed out gently.

"An old one, and apparently obsolete. Not, I think, a fair representation of the best your culture can produce."

Skorva and Ivor Hengen had a quick, whispered consultation. "I do not think we can agree to that," Skorva said. "What guarantee could you give that the ship, or the knowledge it contains, will not be used against us?"

It was an obvious question, one which had to be asked. But on the basis of the Golans performance at this hearing, Carnes had little doubt they would regard it as a stupid one. He was not wrong.

After a moment, Zuss said; quite quietly. "I would suggest, Your Excellencies, that the best answer to that would be another question: *If we intended to attack your Web, why would we do it in ships designed according to principles we discarded a thousand centuries ago?*"

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Then Cembar spoke. In most ways, the huge being was as emotionless as his squat colleague. But his willingness to talk made him a little more communicative, though he was not in the same league as the garrulous Ruar.

"It is not our purpose to belittle your accomplishments," he said, speaking slowly as if each word were being picked with meticulous care. "But it is obvious that your political and ethical systems exist as much to protect you from each other, as they do for mutual benefit. Thus it is we who must be selective in what we give, as must any entity who is dealing with one less mature."

Some diplomat, thought Carnes wryly as he mentally substituted "adult" and "a child" in place of Cembar's "entity" and "one less mature." In these exalted chambers of the Grand Council of the Galactic Web, the Golans had so far won every round in this battle of ideas. But in spite of their amazing performance, the aliens had not yet produced any tangible proof of their superiority, and apparently had no intention of doing so.

Damn their blasted logic!

Carnes squirmed in his seat as he contemplated the enormity of his assignment. How the devil could he prove what the Golans were—or weren't? It would be tempting to throw in the towel and acknowledge what had seemed obvious from the beginning. But his years with Special Eight had taught him to deny any such compromise. Short of going out to The Golan Federation himself, however—

Skorva had been consulting with his colleagues, especially with his Terran deputy. When he finally turned back to the Golan ambassadors, there was a distinct chill in his tones when he said:

"As you have so truly pointed out, we of the Web still exist under a shadow of mutual distrust. Obviously, then, we can hardly trust strangers any more than we do our friends. We, therefore, require adequate proof of your statements and intentions before we can accept any of your proposals."

Ruar drew herself up to her full, spindly height. "What proof do you need?" she demanded.

"That which can only be obtained by Web representatives returning with you to The Golan Federation. Their experience must be the basis on which we render our decision."

The Golans hurriedly conferred; three, widely different beings forming an odd little tableau as they drew together. As he watched, Carnes felt slightly repelled. Though he knew himself capable of forming reasonably amicable relations with any being in the galaxy, he also knew he could never tolerate the almost intimate physical proximity now being demon-

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strated by the Golans. It would, he thought, be a long time before the races of the Web could equally demonstrate such lack of prejudice—

A *long* time.

"We accept," said Ruar suddenly. "You may send two representatives. One may be any of your choice. The other must be the Terran you call Carnes."

Carnes supposed he should feel surprised at this development. Instead, he felt only relief: relief that what had started as an impossibly tough assignment had suddenly become reduced to a mere matter of routine confirmation. And with a real travel experience thrown in as a bonus. The only question now, was: who would be the second representative?

Skorva answered that almost immediately, when he told the Golans:

"Very well. Carnes will return with you to The Golan Federation. And in my capacity as Chairman of the Grand Council, I will accompany him."

The announcement startled even Skorva's fellow council members. But he had committed himself publicly and in front of the Golans, so there was little point in even attempting to persuade him to change his mind. In confidence, before the Trangen ship lifted on the first stage of their journey to Exor, Ivor Hengen explained his own theory for Skorva's unexpected decision.

"I think he wants to retire and return to the Spican version of a simple life. But since no Spican will ever resign from a task or position unless requested to do so, he simply gave the rest of us on the Grand Council the excuse to make such a request: a slight demonstration of what some would interpret as 'irresponsibility'."

"But that's crazy!" Carnes protested. "Even on Earth, we know him as one of the most effective administrators in the Web. So how can you possibly kick him out on a pretext as flimsy as that?"

"We will do it because he wants it that way," the ambassador rejoined mildly. "And if I were in your shoes, Mr. Carnes, I wouldn't mind at all. After all, you have gained the assistance of a very formidable mentality."

"But you're not in my shoes!" the Special Eight man retorted angrily. "On top of everything else, how can I be expected to look after *his* safety?"

The answer was sharp. "You're expected to do no such thing! Skorva may be Chairman of The Grand Council, but as far as you are concerned, he is just your fellow representative. Treat him as such."

"Oh, yeah?"

But, as it turned out, Carnes's skepticism was badly misplaced. Skorva, in fact, was an excellent

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companion. In physical appearance he was a fierce-looking being, with immensely long arms either side of a large, white-furred body. But his tigerish face contained two, startlingly intelligent eyes. And his personality was gentle and rather contemplative. He spent hours during the trip, probing Carnes about himself and his background. He also displayed an intense interest in Earth and its turbulent past.

"It must be its history of competitive violence which has made your race so uniquely valuable to the Web," he told Carnes during one session. "As family groups, tribes, nations, and then as a unified race, you Terrans have remained excessively protective of what you regard as your individual rights. You even seem ready to come to the defense of the rights of complete strangers! It is this racial characteristic which I suspect is largely responsible for your strange ability to detect 'wrongness' in its various forms."

The old Spican had then smiled. "Your own organization has already rendered valuable service to the Web, Mr. Carnes. And I think it will in this case, as well."

Expecting that the result of their current mission was already a foregone conclusion, Carnes was not overwhelmingly impressed by the suggestion that S-8 was about to reap new glories. But as a visitor to a civilization apparently more advanced than the Web, he intended to soak up information like a hungry sponge. Far too many good ideas, he knew, had been examined and discarded by the Web hierarchy as impractical or "visionary." But, if some of those ideas had already been put to good effect by the Golans and could be examined, recorded, and their practical benefits proven—that hierarchy would then have no choice but to knuckle under before the obvious. And, thought Carnes with a satisfaction verging on smugness, even the most obstinate conservative could hardly argue in the face of Skorva, the Spican.

On Rhis IV, they transferred to the Rhodan ship the Golans had converted to their own use. The three Golans, strangely incommunicado during the journey from Galacenter, immediately became correct and efficient hosts. It was as if they were treating Carnes and the Spican with careful duplication of the politeness they themselves had received in Galacenter.

Yet during the months it took to cross the immense distance to the territory of the Federation, neither of the two Web representatives learned any more about that civilization than they had known before. Apparent "navigational" duties always kept at least two of the Golans in the control center of the modified craft. The other, though always affable enough, consistently avoided discussion of the subject; usually by the time-honored method

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of answering every question with another question—usually about the Web and its history. Only Ruar gave any form of direct answer, and then after particularly strong insistence by both Carnes and his Spican companion.

"You must wait," she said. "It will not serve our mutual interests to allow you to form preconceived ideas about The Golan Federation of Stars. We prefer that you first see for yourselves. *Then* you may make your judgment."

With which they had to be content.

Their first sight of Exor, the Golan administrative planet, was an experience in itself. Even before they were close enough to observe surface details, the viewscreens gave evidence of an actively complex pattern of space commerce. Blips representing hundreds of ships rose and descended through the cloudy atmosphere in stately columns of light. Others were orbiting at various distances up to at least four or five diameters out. Closer, they saw through gaps in the clouds, a single continent which apparently covered most of the visible hemisphere.

And on the continent, was one, great glittering city.

"Why are there so many clouds?" Skorva wondered aloud. "Clouds come from oceans. And there seems to be little except dry land."

"There is an ocean on the far hemisphere," replied Ruar. "But not all those clouds are of water vapor. Many of them are of dust."

"Dust?" queried Carnes blankly.

A long arm uncoiled and pointed. "A century ago, a huge series of volcanic eruptions occurred along that mountain chain you can see just above the southern ice cap. Since the event had long been forecast, we had evacuated the area and were prepared for what we assumed would be a spectacular, but harmless, display of nature. Unfortunately, we had badly underestimated the scale and duration of the event which, in fact, continued uninterrupted for several years. Our world is now so polluted with the obscuring dust, its ecology is seriously impaired. As individuals, we of Exor do not really suffer. But "—Ruar moved her body in a slight movement which Carnes interpreted as a shrug—"in aesthetic terms, however, I'm afraid we have experienced a severe loss."

The ship eventually came down at a spaceport almost in the center of the vast city. A rectangular structure immediately lifted alongside the hull till it was level with the nose of the ship. Then there was a thud as a section extended from the structure and clamped to the air lock.

"Come," said Ruar.

Accompanied by the three Golans, Carnes and Skorva were taken down to a level which the Terran estimated was at least several hundred feet below the surface of the

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planet. At the base of the elevator, they entered an enclosed vehicle in which they traveled for exactly thirteen minutes, though there was no way of estimating how far it went or how fast it moved. Finally, through a short access tunnel they were escorted into a room which was profuse with cushions, a thick floor covering, and little else.

"We will make certain arrangements and then return," said Zuss. The Golans then left through a circular doorway which fast closed behind them.

"We are here," said Skorva. He looked disapprovingly at the closed door. "Apparently."

"And we have seen the inside of an elevator, the inside of a vehicle, the inside of this room, and the *outside* of the same three Golans we have already been looking at for months!" After a fruitless search for the door's opening mechanism, Carnes gave up in disgust and lowered himself on to one of the cushions. He picked up an orangey looking fruit from a nearby bowl and nibbled it cautiously.

"Hm-m—m," he said finally. "At least one thing tastes pleasant around here."

"They are probably meeting with their superiors to decide what to show us," the Spican surmised. Skorva selected another cushion and watched Carnes through enigmatic eyes. "I suspect this mission may not be as straightforward as we assumed, Terran."

"The conducted diplomatic tour is not unknown on my planet." Carnes looked for a place to deposit the uneatable core of the fruit, then tossed it back into the fruit bowl. "The idea, of course, is to convince your guests that you are exactly what your propaganda says you are. Not, in other words, to confuse the issue with unnecessary facts."

"Such as, for instance, the existence of a slave colony on a supposedly free planet?" Skorva smiled. "Mr. Carnes, if our hosts are planning to deceive us, I hardly think their deception will succeed against that peculiar Terran talent of yours."

Carnes shifted uncomfortably. "Please don't overestimate that talent. I am, after all, still human."

Skorva chuckled. "Obviously."

The Terran hurriedly changed the subject. "Perhaps if we reviewed what we know about the Golans and this planet—"

"Such as?"

"Such as this city, for one thing. It certainly looked impressive enough from space. But why is it so huge?"

"To house an extremely large population, I presume. After all, you saw the space traffic. Most of it is probably necessary just to bring in the materials to keep this population above starvation level. The planet itself could certainly not support that many."

"That's what I thought. If you

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were running The Golan Federation, Skorva, would you run it from a world such as this?"

"Not if I could help it. I would locate the administration as far from the main centers of population as possible: preferably on a world which is naturally barren. Otherwise, local politics would inevitably interfere with judgments which should be made on a much wider scope. Galacenter, for instance, is such a specialized community."

"Such as Washington, Brasilia, Canberra—"

"I beg your pardon?"

"Terran cities which were originally built as administration centers."

"I see."

"Of course, the Golans did tell us they had advanced beyond politics."

Skorva nodded. "I remember."

"But did you believe that statement?"

"I think it depends upon one's interpretation of the term," the Spican replied cautiously. "In its broadest sense, of course, politics is the science of government."

"Which means that if the Golans are beyond politics, they are beyond government." Carnes snorted disgustedly. "If The Golan Federation is an anarchy, then the whole universe is crazy . . . or I am!"

Skorva said warningly: "Mr. Carnes, a difference in semantics is hardly sufficient to condemn the Golans as liars. We must have something stronger than that."

"Agreed." Carnes got to his feet and angrily paced the room. "But if these people have something to hide, you can be certain they won't lead us to it!"

"There may be other considerations behind their actions, of course," Skorva said thoughtfully. "Considerations which affect our safety, for instance."

Carnes stopped his pacing. "Our safety?"

"So far, we have been carefully isolated and not exposed to the surface atmosphere. Even now, Golan specialists may be monitoring our body systems to check their compatibility with the gases in that atmosphere. Ruar did admit to us that there was extensive volcanic contamination."

"Oh, yes," said Carnes. "Now that's another thing—"

The door opened and Ruar appeared.

"I apologize for leaving you unattended," she told them. "It has been arranged, however, that you be taken to see part of the city. Unfortunately, there will be one slight inconvenience."

"I think we understand," smiled Skorva. "You do not feel it is wise for us to breath your outside air. Is that not so?"

It was the first time Carnes had seen a Golan display a recognizable emotion. Ruar's whole stance indicated astonishment as she asked: "How did you know?"

Abruptly, she resumed her mask

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of imperturbability. "Certain contaminants within the atmosphere may irritate your breathing organs. Therefore, we will travel in a sealed vehicle."

She led them only a short distance this time, to an elevator which lifted them to a large transport terminal on the surface. Carnes glimpsed a crowd of beings watching them from an elevated platform at the far end of the terminal; smelled briefly an odor which was pungently unpleasant, and then they were ushered into a transparent-topped vehicle. Zuss, or a being who looked like Zuss, was at the controls.

The tour lasted three hours, which as far as Carnes was concerned, was about two hours too long. They sped below a gray sky through streets equally gray and completely deserted. The buildings either side appeared to have been constructed from a standard module: stacked horizontally or vertically like a child's building blocks. They were slab-sided, almost windowless, and used only a few basic colors. The colors, Carnes suspected, were not there for aesthetic reasons, but merely as a convenient means of identification. An occasional V-shaped atmospheric craft could be seen speeding above the towers. Once, one of the Golan teardrop shaped spaceships was briefly visible as it lifted ponderously into the clouds. A few minutes later, there was a momentary glimpse of a group of Cembar's people standing at the far side of a featureless plaza. They seemed to be standing in a perfect line. A military drill, the Terran wondered. Ruar did not enlighten him.

During those three hours, Zuss—if it was Zuss—said nothing. Ruar did little more than describe the various structures: living blocks, automated manufacturing, entertainment centers, transport terminals. Only when describing the scientific displays they were to see later in the day, did Ruar show any sign of animation. She convinced her listeners that in that field, at least, the Golans would not be as reticent.

Again, the two Web representatives were left alone in their quarters. After idly examining the communications screen which was recessed into the wall alongside the entrance door, Skorva turned and saw that the Terran agent had gone into the smaller room which adjoined the larger, living space. Carnes was apparently examining the strangely shaped toilet facilities which he and Skorva had already used.

"A rather unusual interest for you, isn't it?" asked the Spican with evident amusement.

"Maybe," replied the other. Wearing a slightly puzzled look, he got stiffly to his feet and re-entered the living space. "Skorva, in a place such as Galacenter, how do you provide for the physical needs of

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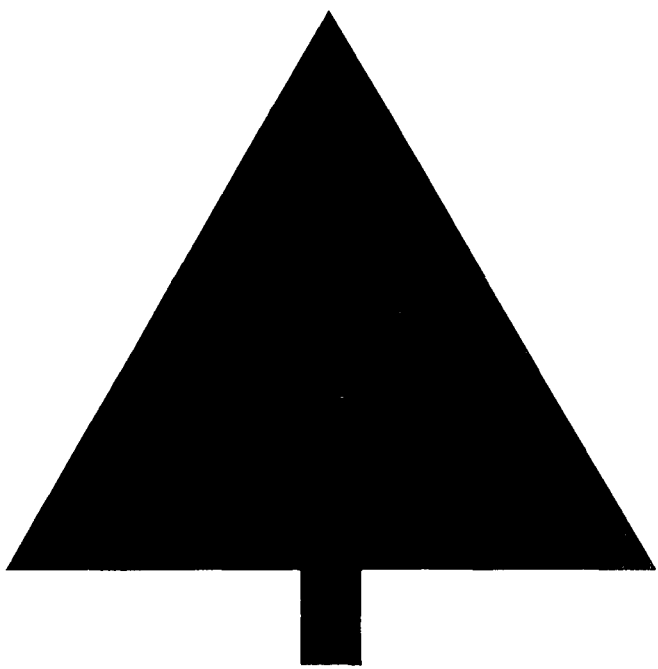

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the various beings who must stay there?"

If Skorva thought the question unusual, he gave no indication of it. Instead he answered:

"It is not difficult when you consider that all biological systems operate in a similar fashion—ingestion, digestion, and then ejection. You only need a supply of cleaning liquid, usually water; a drainage system; and finally a plug-in system of fixtures which can be changed to suit the individual guest."

Carnes nodded. "That's what I thought. You know, isn't it strange how we take these things for granted when we use them without inconvenience? It was only because I found the setup in there so awkward, that I started wondering—"

"Wondering?" prompted the Spican gently.

"About the fact that those arrangements in there are *built in*. You couldn't have a more permanent layout, and it is obviously tailored for individuals of the three races represented by our hosts. Does that fit in with the concept of a Federation encompassing over six hundred worlds?"

"Those three races are permanent residents of this planet," Skorva reminded.

Carnes shook his head. "Sorry, it still doesn't fit. Even if these people have been sharing the same piece of real estate for a million years, they couldn't possibly have developed that much togetherness! In any case, wouldn't you expect them to house us in quarters they normally use for outworlders? At any one time, there must be thousands here. After all, those ships must be crewed by somebody!"

Skorva regarded his smaller Terran companion thoughtfully. "You have made some valid points, Carnes. However, I suggest we keep them to ourselves—for the moment. We attend that scientific display shortly, so perhaps we may gain a few more pieces to the puzzle."

Puzzle. Skorva's chance remark triggered a brief memory from Carnes's childhood: a memory of a small boy growing petulantly angry because he could not find the piece which would complete his jigsaw. Without the piece, the whole picture was wrong. With the piece, it became delightfully right.

Perhaps there was an analog here. What Skorva had referred to as his sense of "wrongness," had become increasingly stimulated with every moment on the planet. Clouds of volcanic dust which unaccountably persisted after a hundred years. A government of a star-spanning federation which just as persistently refused to abandon this world for one much more suitable. The peculiar lack of facilities for aliens who were arriving and departing in the greatest fleet of ships he had ever seen. The even stranger relationship between the three races who inhabited the planet—and

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which of the three was indigenous? Or had there been an original race, perhaps destroyed in an alien war long forgotten? Perhaps there was evidence: *one* piece of evidence which would make the wrongness right. Carnes did not believe in miracles. But he knew how isolated facts could sometimes answer a whole lot of questions—

Facts. Great Stars, if only there were more *facts*.

When Ruar came for them again, she did not, this time, take them to the surface. Instead, they went up just a few levels to a long vaulted chamber whose dulled, decorated walls suggested great antiquity. The space contained rows of display cases, a large area of junglelike growth above which blazed the brilliance of simulated sunlight, and a cleared area at one end where various enigmatic objects were set up on temporary stands.

"Before we attained true civilization," Ruar explained as she led them along the edge of the chamber, "there was a brutal war which completely devastated the surface. That is why these tunnels and chambers are so extensive. They once supported an entire population."

"A population of which race?" Carnes immediately challenged. "Yours?"

"Our origins are of no consequence now," Ruar replied evasively. Carnes lost the opportunity to pursue the subject further when Cembar's huge figure lumbered forward to meet them.

"We are pleased that you have come to this place," the big Golan said in his flat, emotionless way. "It is here we will demonstrate the things we wish you to take back to your Web."

Zuss was there, too, standing a few feet behind Cembar like a fat little statue. Farther back, behind a transparent enclosure which stretched across the end of the room, a varied group of Golans figuratively craned their necks as Carnes and the Spican came into view.

Carnes watched the watchers. "Who are they?"

Zuss moved. "Selected members of the *Kaa*. That is our equivalent to your Grand Assembly, Terran."

"Let us see your display," said Skorva, after a brief glance at their audience.

Perhaps because he was not particularly of a technical bent of mind, Carnes found the demonstrations only mildly interesting. The bubble energy field which contained a pure vacuum yet which permitted solid objects to penetrate with perfect ease, he realized would be of undoubted value to those who still had to navigate around Galacenter in environmental capsules. He was momentarily diverted by the fascinating sight of a huge concrete block supported on a framework so tenuous as to be almost invisible.

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And if Ruar had not called his attention to it, he would not have even noticed the metal sample which was enduring an outrageous series of torture tests in an enclosed chamber. Only when Skorva reminded him that this metal could make Terran ships vastly more economical at ultimate velocities, did Carnes take a second look into the chamber.

After he judged he had observed sufficient diplomatic niceties by listening to an interminable series of ponderous explanations by both Zuss and Cembar, Carnes casually wandered away to look at the other displays. But as he came closer to the watching Golans behind their transparent barrier, they backed away from him nervously.

He stared with astonishment. *Great Stars, they're acting as if they've never seen another alien before.*

And then, startlingly: *Maybe they haven't!*

Perhaps it was a minor point; an innocuous oddment in an odd world. But logic could hardly explain their apparent fear of one alien, not when they were supposedly familiar with entities from hundreds of different worlds.

Most of the exhibits, he soon noticed, were devoted to natural history. Artfully contrived models and viewscreen displays, dealt with a time when the planet's single continent swarmed with a fascinating variety of life forms similar to those in Terra's Mesozoic era. He followed the exhibits through to more modern times into a section where models and animation were replaced by live specimens—pitifully small creatures still able to survive on a land mass almost smothered under concrete.

Curious why such an advanced civilization had neglected the civilized art of conservation, Carnes's curiosity was even more aroused by the strange gaps amid the exhibits. The gaps explained, perhaps, why he had been allowed to wander off on his own—what the Golans did not want their visitors to see had been carefully removed. But as if to demonstrate another glaring inconsistancy, one exhibit which did remain, promised an answer to at least one major question.

A large panel contained a viewscreen plus stylized images of the three types of being who inhabited Exor. Connecting lines led down from each of the images to a series of tiny shelves; each shelf containing a metal bar a little shorter than a human index finger. Then the line converged on a single shelf centered below the others. His imagination eagerly translating the symbols below the exhibit to something like: *The Three Races of Exor: Their origin.* Carnes took the lowest bar from its shelf and inserted it into a blue-outlined slot on the edge of the screen.

Though the bar fitted perfectly, nothing happened.

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The Terran cursed under his breath, searched fruitlessly for an "on-off" switch, even tried to jiggle the exhibit like a pinball machine. Finally removing the bar, he stared at it as if he could materialize the magnetic message it contained.

It was obvious that the Golans had de-activated the exhibit for the same reason they had removed others: they had something to hide. And whatever it was, it had something to do with the nature—or origins—of the Golans themselves.

Feeling extremely frustrated, Carnes went back to the last of the living exhibits: a transparent cabinet which contained a colony of creatures much like four-legged insects. He regarded them sourly.

Wish I could stick the Golans under glass, like these little horrors. Sooner or later they'd give something away—and I'd be watching!

One of the creatures scampered into a corner where two others were skittering back and forth in some sort of instinctive ritual. Carnes watched; at first with only vague curiosity, but then with increasing interest. Suddenly, he realized he was witnessing something extraordinary, a process which till now had been regarded by Web biologists as little more than a theoretical exercise.

But only when he noticed that the creatures involved were not *apparently*, of the same species—

Ruar asked: "What is the matter with the Terran?"

Skorva followed her outstretched arm to where Carnes was visible standing amid the display cases in the center of the room.

"Stange," he commented.

"Is it a sickness?"

"Not really. Though I am not too familiar with the phenomenon, I understand it is a standard Terran reaction to the incongruous. The behavior has no logical purpose to it, as far as I can tell." The Spican shrugged. "But I believe they find it enjoyable."

"Does it have a name?"

"Oh, yes. They call it laughter."

"Of course, we had to play it cool until we got back to Galacenter," Carnes told the director of Special Eight. "But once our three friends knew what we knew, they became quite co-operative." He grinned. "After all, there was little else they could do."

"And they accepted the Web's terms?" asked Hinesdale.

"Unconditionally. They'll benefit from the arrangement, of course. But only at the cost of some of their precious sovereignty."

"Lucky for us they didn't get what they originally came for," Hinesdale said thoughtfully. "One expansionist empire can cause a lot of trouble."

Carnes shook his head. "It would never have got that far. In fact, their battle was lost as soon as Skorva insisted that Web representatives return to their so-called

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"Golan Federation." And even if they had shown us any less than they did, we would simply have returned and reported insufficient evidence. If they had shown us more, we would certainly have discovered that their culture was prestellar."

The deputy director grinned. "So even if I had not taken a second look at those crazy insects—"

"What about some of your other suspicions? That huge city?"

"Complete, uncontrolled population growth. Malthus would have loved it."

"And the volcanic gases?"

"Volcanic, my foot! It was industrial pollution on a grand scale; enough, in fact, to make Twentieth Century Los Angeles lily-white in comparison. Ruar tried to anticipate that problem by her story about the volcanoes, but Skorva's nose told him otherwise."

Hinesdale laughed. "Yeah, I've heard of the chemical factory the Spicans carry around."

"And you can believe it! We got a whiff of the stuff just once. But Skorva later identified all the usual contaminants to me: sulphur and nitrogen oxides, a few hydrocarbons and all the other junk. Even the natives didn't regard it as a very healthy environment!"

"But their heavy space traffic must have fooled you for a while."

"Oh, it was impressive enough. But instead of originating from hundreds of different suns, they were sub-light freight carriers bringing in raw materials from other planets of the system. Exor itself, I suspect, is just about mined dry."

"Did you ever learn what happened to the crew of that Rhodan ship?"

Carnes shook his head. "Not a clue. Frankly, I prefer to believe what the Golans told us: that the Rhodans died through misadventure. To believe otherwise is to worry about something that can never be proved."

Carnes finished his drink. Then, as he held out his glass for a refill:

"I've often wondered why they simply did not tear the Rhodan craft apart and study its drive. By now, they might have had the beginnings of an interstellar fleet. And maybe, even, the beginnings of a real Golan Federation."

"So that in a few centuries or so, the Web would have to send out ambassadors to learn *their* secrets?" Hinesdale smiled humorlessly. "Personally, I thank Heaven they were greedy enough to want more. After all, it enabled you and Skorva to spike what might have developed into a serious threat."

Appreciatively, Carnes studied the sparkling liquid in his glass. "Perhaps. But you know, we would have had a helluva difficult time proving what they were. Most of the evidence was pretty circumstantial; even the antics of those insects. And without *them*, I would still be pounding my brains!"

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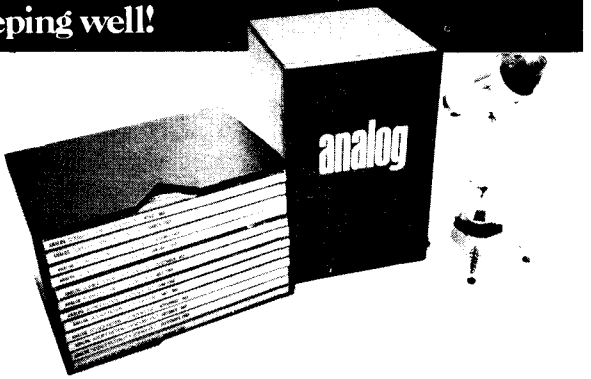

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"You brought back that magnetic bar," the director pointed out. "That was evidence enough."

"Sure it was. And believe it or not, I had the thing by accident! I guess I slipped it in my pocket after I got mad with that machine. But until we got back, I was never even sure that it *was* evidence . . . how was I to know, for instance, that it had not been erased?"

"Well, I've seen a tape of what that innocent little piece of metal contained. It was very"—Hinesdale coughed—"descriptive. Even human instructional tapes stop short of that sort of frankness. Have you, by the way, heard any explanation for their physical differences?"

"Specialization. Apparently, Exor was a pretty tough world. So while one raised the young, the second specialized as guard, the third as hunter. The adaptations, I believe, were somehow triggered when number three fertilized the eggs. Anyway, the instruction bar proved beyond doubt that the Golans were no more of separate races than—"

Carnes floundered in a verbal morass for a moment. Then he shrugged and added lamely: "Than men and women, I suppose."

"A female," Hinesdale said softly. "A male. And . . . what?"

Carnes grinned. "Frankly, Chief, I'd just as soon lump them together as tri-sexual." ■

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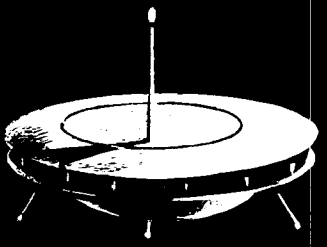
shapes to come



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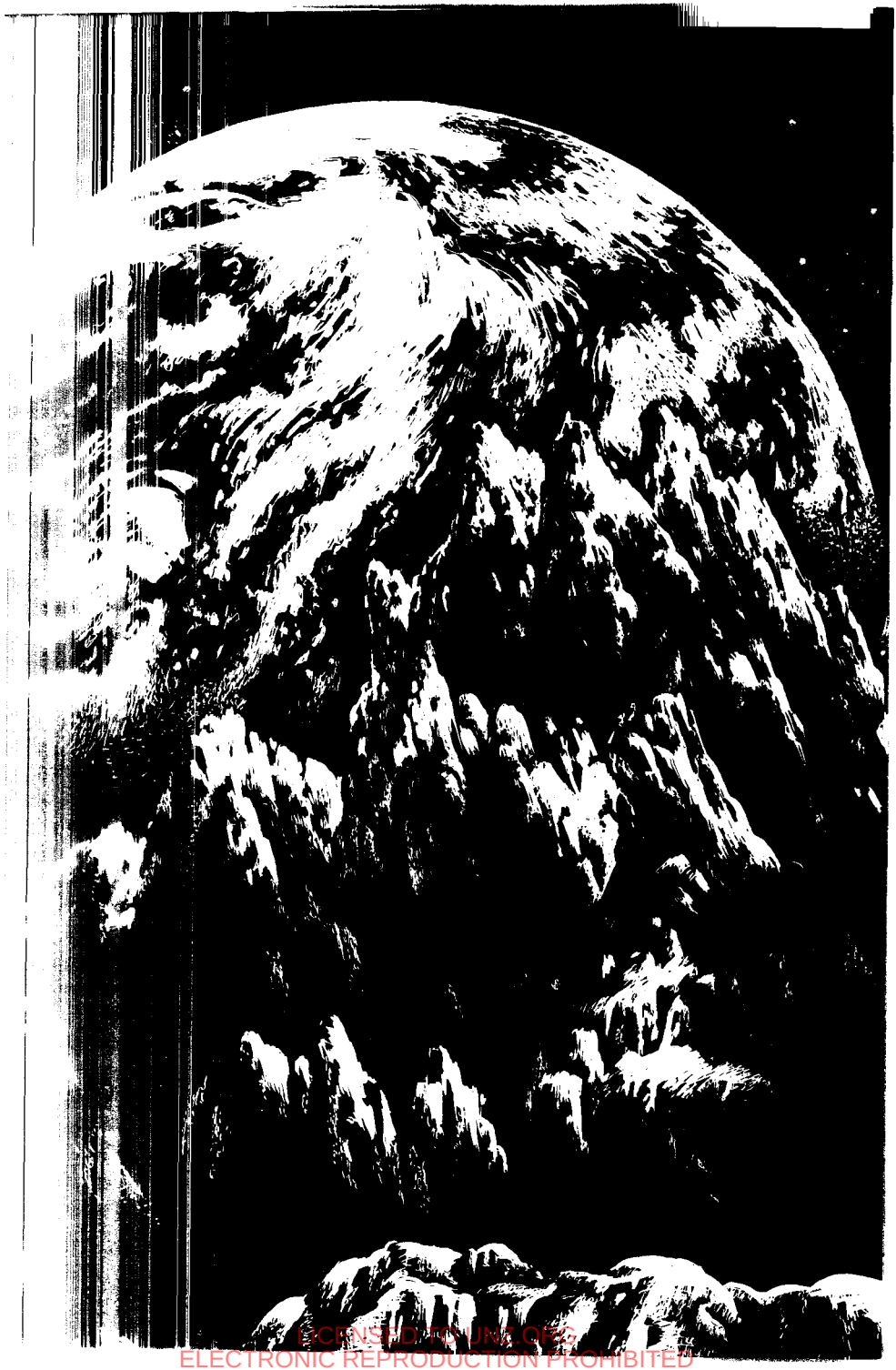

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Built-into-the-genes instinctive reactions are wonderful in their complexities and delicacy— no matter how they got there!

EDWARD WELLEN

Illustrated by Vincent DiFate

He had painted on the picture window silhouettes of cats and of owls, hawks and other birds of prey. *"Silhouette, gentille silhouette,"* he had hummed as he painted. On Earth such kindly horrors had served, before soft glass, to stop songbirds from dashing themselves to death. This picture window was of hard glass. No songbirds flew, no songbirds fluted, outside.

"Outside" meant a sweep of crater rim on the Moon's back side and, for the recent past, a Starbird on its launch pad three kilometers away. Occult Earth would be the size of a quarter; he had seen a quarter once in the display of Earth artifacts at Moon Center, he had seen Earth many times eyeball and more times on screen.

Once, then, in a camp mood he had imposed these creatures of Earth on the craterscape. *"Silhouette, gentille silhouette."* His mood had shifted often since then but he had left the silhouettes in place. They relieved the starkness. They also represented, in reverse, the kind of thing he worked on here in his lab.

His lab and his home. Though he and his wife and their three-year-old daughter could never forget it was more lab than home. They lived in hermetic isolation in this cup under the dome of a force field. The force field sealed them less against meteorite fall than against the remote chance he and the chemputer would turn out a wild molecule.

He was Orim Ingram and he heard the chemputer page him and he seated himself at the console. The chemputer had finished making and testing its first run of the spores. As soon as he felt sure he would speak calmly, he called Moon Center.

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The Moon Center computer double-checked, confirmed that there was no wild molecule in the batch, found him a meteorite-clear window of ten minutes. He piped the spores aboard the Starbird, then called Jeanne and Patti to watch this first epic launch.

"And my robot dolly, Daddy."

"And your robot dolly, Patti."

They came. They could have seen it on a monitor in the living quarters, but it wouldn't have been the same.

Moon Center spoke.

"Station XY, your window begins . . . *now*."

He smiled at Jeanne and Patti and the robot dolly, unconsciously held his breath, pressed the manual override on the force-field hold. The invisible bubble burst. He pressed the launch button. The Starbird lifted. Once beyond solar pull it would explode like a bird hitting hard glass. Millions of spores would scatter across a quadrant of the galaxy. He reactivated the force field.

He looked over to where Patti and her robot dolly were whispering. Patti had been explaining the spores to the robot dolly and now the robot dolly fed back, with new words to build Patti's vocabulary.

"I think I have it now, Patti. Your father, the genetic engineer, makes memory molecules, ribbons of ribonucleic acid. RNA carries information for the synthesis of proteins, passing on the characteristics of the species and the parents to offspring. The particular memory transfer in the spores your father is seeding throughout the galaxy will link into any chain of life they encounter. The message that will pass on from generation to generation is that the human shape should evoke love and trust. Then, many many years from now, when men step out of their spaceships onto some green planet of some far star, the people there—indeed, all the animal and plant life—will greet them with love and trust. Is that right, Patti?"

"Yes. You're a very good robot dolly."

"And you're a very good young female human, Patti."

Orim and Jeanne looked at each other and smiled. Then Jeanne glanced again at Patti's flushed face and gave her attention to the controls on her bracelet. Orim knew Jeanne was programming the robot dolly to damp down Patti's launch-fever.

Watching Jeanne, Orim felt a

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throb of sentiment, a rise of warmth. Even so, he could stand off from himself and eye his feelings analytically. If ever he partnered again, it would be with a girl of Jeanne's type. It would have to be, to trigger what people called love. All other types left him cold. And yet to think of Jeanne as a type took nothing away from her uniqueness. And yet again he could coldly admit her uniqueness would leave some other man cold if that other man happened not to go for Jeanne's type. It was all built-in.

Patti was following the robot dolly's suggestion that they sit quietly and sketch airy-gramaries. He smiled, remembering how Patti when two months old would smile when she saw a human face—if the face wasn't in profile but toward her and was moving. The movement could be Jeanne's mouth opening in a smile, but two eyes and a nose were enough if Jeanne nodded. Given that stimulus, the response was always a loving and lovable smile.

He had tested a cutout of a human face on baby Patti and the cutout had got just as loving a smile. He had explained, much to Jeanne's hurt and anger and quick forgetfulness, that all humans inherit that bit of complex instinctive behavior; that it was automatic; that there was nothing personal in it; that a baby's loving and lovable smile had survival value.

No, Jeanne couldn't swallow that. Baby Patti smiled, really smiled, only at baby Patti's Mommy and Daddy. Mommy and Daddy were the only beings in the whole universe who inspired baby Patti's love.

He looked now at the hawk silhouette on the picture window. Back on Earth—and no doubt on other planets if other planets hatched hawks and geese—the hawk-recognition instinct in goslings had survival value. A gosling froze, or hid, the first time it saw a hawk flying overhead, but had no fear of a goose. Experiment with cutouts had shown the gosling reacted with as much fear to a moving birdlike shape with short neck and long tail as to a real hawk—with as much saucy insouciance to one with long neck and short tail, as to a real goose.

He stared past the silhouette to where the Starbird streaked out of home field, picking up faster-than-light speed. Life was many but far between. The payload of spores would withstand the rigors of space and time. Microsensors would sniff out life-bearing planets, microjets would correct courses, and millions of spores would sooner or later enter millions of atmospheres.

For a moment he stood off from himself and with a tight smile, remembering human history, thought that from an alien point of view Project Love might seem a mother tumor seeding cancer cells into surrounding organs. Then he put that

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out of his mind. His not to reason the Ys and Xs of the moral and ethical problems Project Love raised. Besides, Jeanne was saying his name.

Jeanne had got Patti and the robot dolly to erase the frozen smoke of their airy-gramaries and was gently insisting:

"Time for lunch, Orim."

With love, he swept Patti and her robot dolly athwart his shoulders, hooked his arm in Jeanne's, and headed for the living quarters.

Orim Ingram forgot the first run of spores in the busyness of turning out the second, except for one moment nine months later when telemetry confirmed that the payload had burst on schedule and the spores were spreading out through the first quadrant.

He was nearing readiness on the second run, another Starbird waiting on the pad, when the alarm rang.

Orim hurried Jeanne, Patti, and himself into spacesuits, and the robot dolly into its toy spacesuit at Patti's scream of reminder. He nodded reassuringly at Jeanne and Patti, but he knew their spacesuits were just as make-believe, in effect, as the robot dolly's. Anything that got through the force field would leave nothing in the particular volume of space the Ingrams took up.

Moon Center spoke.

"Station XY. Station XY. The object approaching you is no meteorite. Probability, an alien craft backtracking the first spore-bearing Starbird. Cut in all your power to maintain your force field till aliens make their intentions plain and help arrives."

His own screen still picked up nothing, but Orim switched off environment and chemputer and threw the energy into the force-field circuit.

He looked from console to picture window, at the silhouettes of cats and of owls, hawks and other birds of prey. He gave an unreasoning shiver. Project Love had got underway too late. If beings were aboard the alien craft, they were not the latest of generations passing on built-in love for humans. *Till help arrives.* What help? And against what?

His screen began to answer. The approaching object quickly took shape.

It *was* a craft. But that it was a craft meant nothing. What mattered was its shape. He had never seen that shape, but he *knew* it.

The shape triggered a surge of deep emotion. And now he knew he had always known that shape. For generations he and his kind had been waiting for it.

He overrode the hold, burst the force-field bubble. The craft landed nearby. Orim, Jeanne, Patti, and the robot dolly waited with love for the form that would slither out. ■

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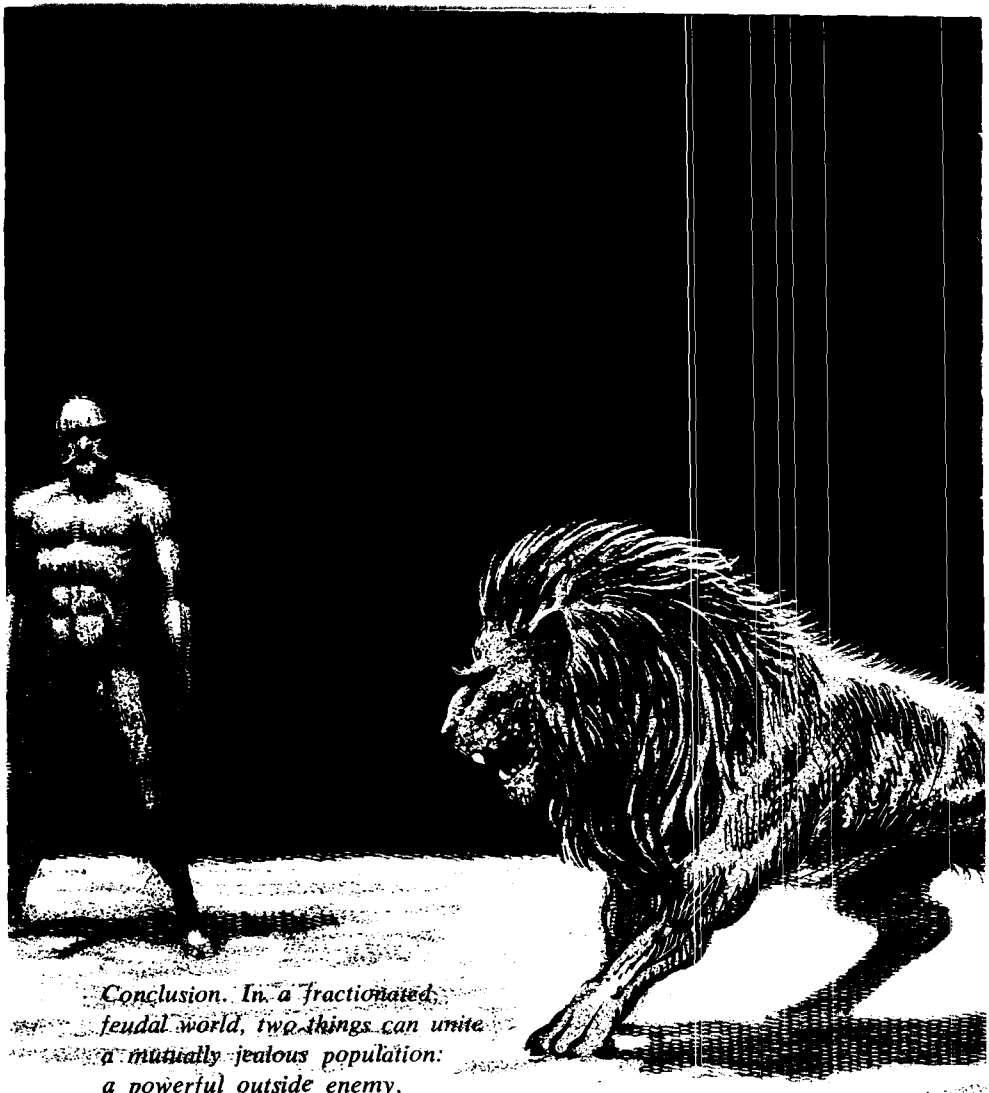

Conclusion. In a fractionated, feudal world, two things can unite a mutually jealous population: a powerful outside enemy, and a legend. But even union can't help if time and generalship are lacking . . .

JOHN DALMAS

Illustrated by Kelly Freas

the yngling

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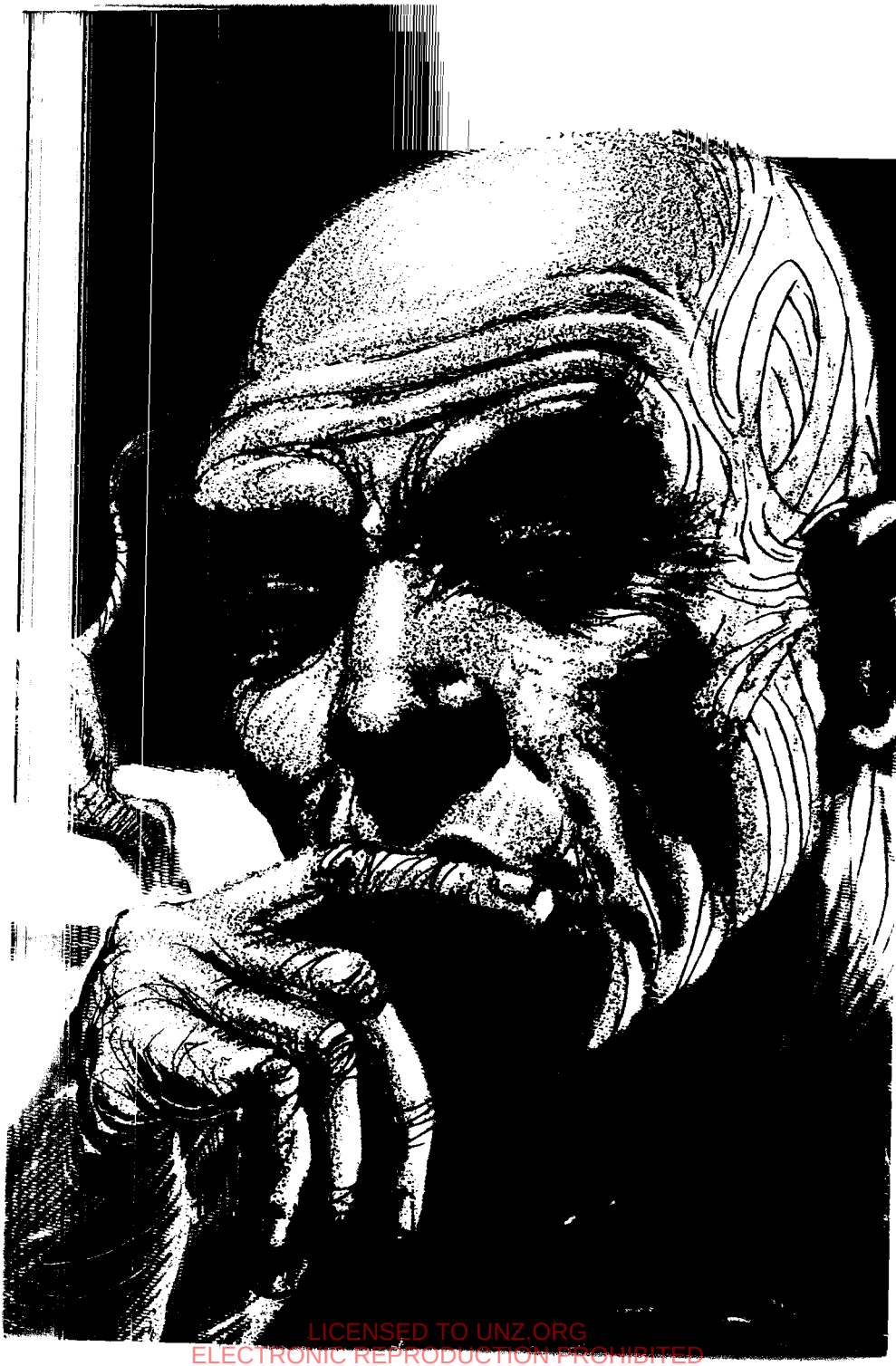

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In 2105 a plague sweeps Earth. Only about 10^{-4} of the population survive, far too few to maintain any part of the complex and integrated technology that sustained civilization.

Seven centuries later most of Europe has attained feudalism. In Sweden and Norway however, where a new ice age is beginning, a much more primitive culture exists—the neovikings—characterized by clan feuds and tribal wars.

Young Nils Järnhand, a warrior of the Svea tribe, is exiled for killing outside the bans. In feudal Denmark he meets Kuusta, a Finnish wanderer, who points out to Nils that the feudal societies of Europe are very different from his primitive tribalism, and that his ignorance and naiveté may be fatal. The Finn wants a companion in his quest for the legendary esper crystal. He offers to teach Nils Anglic—the Lingua Franca of Europe—and other things useful to survival, if Nils will accompany him. Nils agrees.

While walking through the Danish countryside Nils shoots a deer, a natural act for a hungry barbarian, and the two wanderers are arrested as poachers by an armed patrol. Nils's calm, charisma, and remarkable musculature impress the knight-forester who leads the patrol, and instead of hanging them on the spot, as is customary, they are taken to the castle of a Danish noble as possible recruits. Kuusta proves to be an excellent bowman and Nils easily defeats a champion swordsman.

Nils is interviewed by the lord of the castle, the most powerful noble in kingless Denmark. The interview is unobtrusively manipulated by Raadgiver, his white-bearded counselor, and both wanderers are hired as mercenaries.

Later that summer a monster attacks a village and kills several peasants. Mounted men-at-arms are sent. Tracks indicate that the monster is a giant hominoid—the superstitious men-at-arms think of it as a troll.

Finding where it left and reentered the sea, they lie in ambush behind the crest of a dune. Night falls and Nils senses the monster swimming toward the beach. He finds himself looking through its eyes toward the beach, feeling the buoyant water with its body, and sensing with it their hidden presence behind the dune.

Nils alerts the troops. Attacking, they are met by a terrifying howl and a great wave of telepathically transmitted horror which fells some of them in catatonic paralysis. The rest flee in mindless panic. Only Nils still functions. He wounds it terribly, but its giant strength quickly overcomes him. With its blood spewing over him, he passes out.

Nils awakes in the apartment of the counselor, Raadgiver, who belongs to a secret society of psis

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calling themselves "the kinfolk." They trace their history to a pre-plague psionics professor. From various evidence Raadgiver has concluded that Nils is an undeveloped psi. And more than a psi; he is able to evaluate surroundings, people and events with complete objectivity and logic.

Raadgiver offers him a mission: to assassinate a near-eastern ruler named Kazi, also called The Undying, a brilliant psi but also a vicious psychopath. Kazi has an unmatchable army and plans to conquer Europe. To help prepare the conquest, he has introduced into Europe a cult to Baalzebub. Ruthless suppression by the nobility has kept the cult insignificant. "Trolls" are said to be Baalzebub's punishment of the people for refusing to worship him.

Nils accepts and during the following weeks is intensively instructed in history, geography, politics, Anglic, and the uses and limits of psi. An instrument called the psi tuner, surviving from the pre-plague world, permits long-distance thought transmission. Telepathic pickup is restricted to conscious thought, sensory experience, and an accurate sensing of emotion, mood, and personality. Precognition, unpredictable, commonly without context, and frequently irrelevant, is not often useful.

The kinfolk fall into three groups. The Inner Circle, eleven psis with tuners, are counselors to important European rulers and use their knowledge and insights to influence events. Others, without psi tuners, are influential merchants or advisers to important nobles. The third and most numerous group are "The Wandering Kin," a quasi-religious fellowship of pseudo mystics who restrict their influence to the peasants. The awed peasants call them "The Brethren."

Learning that Nils will soon leave, alone, Kuusta decides to return to Finland. In Poland he becomes seriously ill and is taken in by one of the Brethren. Delirious, Kuusta has a vision of a cavalry battle between swarthy pig-tailed barbarians and Polish knights. The brother picks up the precognition and realizes that Kuusta is an undeveloped psi.

In a wild range of Bavarian mountains Nils encounters a heavy autumn snowstorm followed by artic cold. Exhausted and frozen he reaches the hut of Ilse, a young psi woman.

When he wakes up two days later he is surprised to find healing instead of gangrene. Ilse has used a form of psi to keep Nils asleep and heal him. A year earlier she had foreseen Nils's arrival and tells him he will take service with Janos, King of the Magyars.

In Hungary an enemy of the king throws Nils into a dungeon. By wits, daring, and prowess he escapes and is given protection by another

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noble, Lord Miklos, who is loyal to the king.

Arriving in Pest they learn that King Janos II has died. The new king is rumored to be sympathetic to the cult of Baalzebub.

Nils enters the guard of Janos III, begins to learn Magyar, and becomes the close friend of Janos's ward and squire, a boy named Imre.

The king is neither vicious nor evil. As a prince, however, he had visited Kazi's city near the mouth of the Danube. Convinced that Kazi would someday rule Europe, he had secretly allied himself with him. Kazi had given him a counselor, a psi named Ahmed. Janos does not know that Ahmed is also Kazi's spy, reporting to him by psi tuner. Of Nils, Ahmed tells Janos, "I believe he is unable to lie."

In time Ahmed becomes aware that Nils is a unique being in other ways. Item, he can stand fully conscious for an extended period without talking to himself within his mind. Ahmed informs Kazi of him.

Janos receives a message from Kazi, asking that Imre be sent to him. To Janos, a childless widower, Imre is like a son. Ahmed urges him to comply, suggesting that Nils be assigned to the boy as a companion and bodyguard. Actually Kazi wants Nils; Imre is only a means of getting him. The two youths are sent to Kazi.

Meanwhile, winter in Scandinavia had been the longest ever. The chief of the Svear gathers leaders from all three tribes. He has heard of the Mediterranean lands, where the winters are short and mild, and presents a plan for migrating there. Grossly outnumbered, success will depend on unusual tactics and their unequaled skill with arms. It also requires that the tribes complete their Baltic crossing before another winter comes. They have only small fishing boats, but by stealing ships from the harbors of Poland and Denmark they may be able to handle the logistics.

The council sees this not only as a means of escaping increasing hardship; they also see promise of unprecedented raids, and agree to start as soon as possible.

XIII

Kazi, Timur Karim (2064-2831) psionicist and emperor. Born in Kabul, Afghanistan, he received a Ph.D. in neurophysiology from the University of Lucerne in 2087; lectured at London University, 2087-2090; professor of psionics at Damascus University, 2090-2094; and held the Freimann Chair of Psionics Reasearch at the University of Tel Aviv, 2094-2105.

In 2096 Kazi developed the "esper crystal," which became the operating element of the psi tuner. At age forty-one, although in chronically poor health, he was one

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of the few survivors of the Great Death of 2105. He also survived the difficult and primitive conditions that followed the plague, apparently by dominating other survivors.

Seriously afflicted with asthma and without effective medicines, he eventually developed a process of ego-transfer believed to involve the use of drugs and the psi tuner, transferring his ego from his aging and debilitated body to one younger and healthier.

As a child, Kazi had been offensively egotistical, effectively alienating himself from normal human relationships. This trait intensified with his brilliant scientific successes and his increasing ability to read minds and dominate others. His development and use of ego-transfer, with the near immortality it provided, probably furthered the pathological deterioration of his personality.

Sometime about the middle of the twenty-second century Kazi disappeared. He seems to have developed a self-controlled psionic means of suspended animation. It has been suggested that he used this to mark time until an increased population and further socioeconomic development provided something worth dominating. Legends indicate that he was worshiped as a god at the time he disappeared and that periodic living sacrifices of young men were made at his tomb, believed to have been a cave in the Judean Hills. Perhaps they were used for ego-transfers. If so, he may occasionally have emerged to maintain the legend and select his next body.

He became active again sometime about 2750, and from that time our information is less conjectural again. Gradually he came to dominate the middle and near east as far south as the Sudan, as well as much of the Balkans, ruling some of the territory directly and some of it as tributary provinces.

Kazi designed a culture specifically for his army. Each level practiced a harsh domination of the lower ranks, and all ranks brutalized subject peoples. The utmost in cruelty was not merely permitted, but demanded of the soldiers, and discipline was based on fear, the fellowship of mutual depravity, and a superstitious awe and terror of the ruler. He called them "orcs" after an army of subhuman monsters in a classic of pre-plague fantasy fiction. (See Tolkien, J.R.R.) After the first generation most orcs resulted from forced matings between his soldiers and captive women, the offspring growing up in vicious camps whose regimens were designed to produce the orc personality.

After the plague this was Earth's largest single army and its only regular army. Its men were better disciplined and trained than their feudal contemporaries and could be relied upon to fight viciously and skillfully. It also was versatile,

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serving as both infantry and cavalry during a time when feudal armies and most barbaric tribes despised foot warfare.

Kazi himself built-in its major weakness when he designed its culture. Its primary orientation was not fighting but occupying and brutalizing. It was supreme in breaking conquered people, and served its master's psychopathic compulsion for unbounded depravity, but it lacked the fervor and vigor necessary for a really great army in an age of edged weapons and close combat.

Kazi relied on auxiliaries to supplement that shortcoming. Many small tribes of "horse barbarians" ranged and fought with one another in the steppes and mountains of south-central Asia as far west as Turkey. By combinations of privilege, flattery, and threats he was able to unite and command the use of large numbers of those tribesmen when he wished, mostly to control other similar tribes. The horse barbarians sometimes lacked discipline and unit coordination, but they were skilled and reckless cavalry whose passion was fighting . . .

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XIV

The Duna had carried them out of the prairie through forested mountains and then eastward for several days through open grasslands again, with hills to the south and broad plains and marshes to the north. Occasionally they passed herds of cattle accompanied by mounted horsemen, and when they were near enough Nils could see that they carried no weapons—not even bows—to protect themselves or their herds. He realized they must have entered Kazi's realm.

Nils and Imre had almost memorized the map that Janos had given Imre. Therefore, they had been expecting it when the river turned north and the barges left it to enter a great canal, built by the ancients, that left the Duna and struck eastward like an arrow toward the sea. On its south bank would stand the city of Kazi.

After a number of kilometers an obsidian tower could be seen glistening blackly at a distance, and as the current carried them rapidly along they soon saw other buildings, of dark basalt. They were passing kilometers of barbarian camps on the south side of the canal, with the banners of many tribes moving in the wind above the tents. Men in mail, or leather shirts, or their own leathery skins rode at sport or in idleness, sometimes stopping to watch intently the richly ornamented barges.

In a sense the city of Kazi was a military camp, for its purpose was to house his orcs, but it was much more than a camp, for no town could match its engineering

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and order. From the palace with its tower, rows of dark stone buildings radiated outward like the spokes of a wheel.

The steersmen now were running close to the south bank, and they passed stone graineries and warehouses where stone steps led up from the wharves. Ahead was a balustraded wharf of dark and beautifully figured gneiss, with broad stairs of the same rock climbing to a gardened courtyard in front of the palace. Their steersman shouted, and for almost the first time the oars were wetted, backing water briefly to slow the barge almost to a halt as they approached the wharf. Naked brown men, some nearly black, handled the line, while others, wearing harness and weapons, waited for the passengers. A gangplank of dark burnished wood was laid across the gunwales, and Imre and Nils landed. A fat toga-clad man with a sharp beak of a nose bowed slightly to Imre. In almost falsetto Anglic he announced, "His Holiness has instructed that I escort you to your apartment. Baths and fresh clothing await you there. When you are refreshed, His Holiness would like an audience with you, and I will return to conduct you to him."

"And may my friend accompany me to that audience?" Imre asked.

"His Holiness has specified that both guests should attend, unless" The steward bowed slightly again —"Your Lordship wishes otherwise."

He led them across the courtyard to the palace and up exterior steps to a terrace garden, where looking eastward into the distance they caught sight of the sea; and a harbor with many ships. The walls of their apartment were veneered with white limestone and hung with soft lustrous blue material. The glazed windows were open and the heavy curtains drawn back so that the rooms were light and airy.

The steward dipped his head again and left.

The white stone baths were as long as Nils's reach and set mostly below the floor. Steps entered them. Imre knelt, dipped his fingers into one, and his breath hissed between his teeth. "My blood!" he gasped. "Are we supposed to bathe or be boiled?"

Nils grinned like a wolf and began to strip. "In my homeland we take steam baths and then roll naked in the snow."

"Huh! I'm glad we're here instead of there then. What do you call it again? I'll be careful never to go there."

"It's called Svea, and the real reason I was exiled is that they considered me a midget. My growth was stunted from missing too many steam baths." Very carefully he moved down the steps into the water. "I've never confessed it to anyone since I left there," he added, "because it's embarrassing

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for a northman to be a midget, and I've been trying to keep it a secret. I hope you won't tell anyone."

Imre had scarcely settled on the sitting ledge in his bath when a dark girl entered the room. Without speaking she set a dish of soap on the curb beside each bath and left.

"Well!" Imre stared after her in adolescent indignation. "They certainly have strange customs here, where women come into a man's bath—and a young pretty one at that. Say, look, the soap is white! And smell it! Like a woman's scent. Can stuff like that possibly get us clean?"

Nils stood and began to lather his torso with it, the sinews in his arms, shoulders, and chest flexing and bunching as he washed. Imre stared. "You know," he said, "I'd take steam baths and roll in the snow if I thought it would grow me muscles like yours."

Nils grinned again, squatted to the neck, lathered his pale hair and submerged. When he came up, Imre was staring past him in distress. Two young women had entered and stood quietly, holding long fluffy towels. Nils emerged calmly and stood while one of them dried him. Then she left, again without a word. On each of two benches lay clean white clothing, neatly folded. Nils walked to one of them and dressed, in loose white pantaloons and a white robe that came to his knees. There was no belt or other ready means for fastening on as much as a dagger.

Imre's expression was pure consternation. "Go!" he said to the remaining girl. "I will dry myself." She turned. "No, wait." He looked grimly at Nils and climbed quickly from the bath to be dried. He did not speak until he had dressed himself.

"I've never heard of such shameless customs before," he said tightly, "and I'm going to demand that they keep those women out of here before we become degenerate and useless. I . . ."

The soft-faced steward had quietly entered the room and made his slight obeisance. "Your Lordship, the chief of your guard, who calls himself Sergeant Bela, awaits your pleasure."

"Awaits our pleasure!" Imre exploded. "That's more than you know enough to do. Haven't you ever heard of announcing yourself before entering? After this, knock, or use a bell or something."

The steward bowed more deeply.

"Now you can tell Bela I'll be happy to see him, and then have some food and drink sent up."

With another bow the steward left, and a moment later they heard firmer footfalls. There was a sharp rapping, as of a dagger haft on the wall beside the door.

"Bela?"

"That's right, m'lord."

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"Come in then. I thought it was you. None of these people around here have the manners to knock."

Bela glanced around the apartment and his lips pursed silently. "M'lord, we're leaving at once, and I wanted to see you before we went. His Highness will ask me if you were properly received, and I wanted to see for myself."

"Why do you have to leave so soon?" Imre asked.

"They've fed us and have horses saddled and waiting—beautiful horses they are, too. People who breed horseflesh like that can't be all bad. Anyway they say there aren't enough of us to ride back safely after we leave the borders of their land here because of bandits and other swine. But they have a small caravan bound for home, that they've held for us, and they want it to leave right now."

"Well, I guess that's reason enough," Imre said reluctantly. "But I'll miss hearing my own language and seeing good Magyar people. Compared to these people, Nils will seem like a native Magyar, and unless I talk to myself, his is likely to be the only Magyar speech I'll hear." He grinned. "If the next time you see me I speak our language with a singsong, blame it on our little friend. Meanwhile tell His Highness that we've been hospitably received and beautifully housed, and I expect that when they've adjusted to our differences in custom we'll be quite happy."

They walked out together and Bela shook their hands and left.

When Imre and Nils had finished a light meal of sweetened fruit and cream, the steward returned, announcing himself this time with a small bell. Not only his black eyes and bland face were unreadable; the man covered his conscious mind with a wash of no-thought. The household staff here might need to develop that for survival, Nils realized.

"If Your Lordship is ready," the steward said, bowing again to Imre, "His Holiness will see you now."

The throne room was in the tower, and its inner walls, too, were obsidian, but it was well lighted by large windows. The ceiling was no more than four meters high and its length and width about six meters, to enhance the size of its master. The throne was upholstered and the floor carpeted with rich furs. There were four men there. One was a chamberlain—a thin pale expressionless man wearing a toga. Two were tall muscular black men wearing loincloths and holding broad curved swords; one stood on each side of the throne room.

The fourth man was Kazi.

The steward dropped to his knees outside the door and crawled two meters inside, moving his forehead along the floor. "They are here, Your Holiness," he announced in his falsetto, and then crawled out backward, his eyes still

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directed at the floor. Nils had never read such genuine fear before.

Outside the door Imre looked nervously at Nils, uncertain what to do next. Nils stepped forward, entered upright and bowed, then stood aside as if ushering Imre in. Imre braced himself, set his face and followed.

Kazi arose. He was easily the largest man either had ever seen, something more than two meters tall, and utterly naked. He was neatly jointed but hugely muscled, and grossly, almost unfeasibly male. His skin was dark—not brown but almost gunmetal blue, like some of the natives of southern India. The lean aquiline face was a caricature of evil, and a slight mocking smile showed perfect white teeth. He appeared to be about thirty years old.

The air felt heavy with the power he exuded.

He gestured toward two low cushions on opposite sides of the chamber, each in front of a guard, and remained standing until his visitors were seated. Then he lowered himself to the throne and rested his eyes on Nils.

"I have awaited you with interest."

The Anglic words came from the lips of the chamberlain, but the chamberlain's mind was completely blank and there was no doubt that the words were from the mind of Kazi.

Nils nodded.

"And you planned that I should have you brought here. Did it occur to you that that would be very dangerous?"

Not a muscle moved in Nils's relaxed face.

"Unless, of course, you came here to take service with me?" Ahmed was right, Kazi thought. He does not screen; his consciousness simply does not talk to itself. I have never seen this before except in idiots.

"You wouldn't have me in your service," Nils answered in a calm quiet voice.

"Why not?"

"Because you can't read my mind."

Kazi's flash of anger staggered his chamberlain, so that for a moment he could not speak, and even Imre, sitting ignored and bewildered, felt it. "I can read your mind to the finest detail if I wish," the chamberlain's lips pronounced at last, "if you should survive long enough."

"You are wrong," Nils replied matter-of-factly. "For, if I wanted to, I could destroy my mind. You brought me here because you're curious about me. And you are very old, and do not age; time is not important to you. You will prefer to wait and explore me with questions, rather than destroy me."

"Very old?" The words still came from the chamberlain, but it was Kazi's face that turned to Imre.

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"How old do you take me for?"

"You?" Imre asked in confusion, "or His Highness?"

"His Holiness."

"He's about thirty, I'd judge."

"And why," he said to Nils, "do you say I am very old?"

"I sense it."

"You can't see into my mind."

"No, I simply sense it. And if you are very old but look thirty, then it follows that you don't age."

Kazi gazed intently at Nils. "And you could destroy your mind? That would kill you."

"I've been near death before."

"But you are young, and gifted with a great pulsing body that has much yet to enjoy. You do not know how much." Kazi paused, intent for some mental response that did not come, then went on. "And your mind may be one of the two most unusual minds that exist. It would be enormously interesting to see what could be made of it. You can be a ruler in this world if you wish."

"I have looked at the great glaciers in the valleys of the north," Nils replied. "It is said that they are growing toward the sea, and that they have grown and covered the whole land with ice before, and disappeared, time and again. Even you won't live until they melt one time, because you couldn't stand it that long. I have looked at the stars on a clear night. They are said to be so far away that from some of them the light I saw has been a thousand times a thousand years coming."

Nils stopped then. Kazi stared at him for a long moment, and his mind shot out a command. One tall guard raised his sword and swung with all the strength of his powerful right arm and shoulder. Nils was lunging from his seat on the cushion but the weapon moved far too quickly. Imre's head struck the floor without rolling, the carpeting was so thick and soft. Nils felt sharp steel against his back, and stared as Imre's body toppled slowly sideways, blood spurting from the neck.

"So. You are subject to emotions after all," the chamberlain's voice said. "The difference is that there is no positive feedback. It flashed and died, as in a cat. Have you ever thought of yourself as a beast?"

Nils sat, relaxed again, watching Kazi without answering.

"And where did you learn about ice ages and the distances between stars?" Kazi asked, abandoning the use of his chamberlain for direct psionic communication.

"From a wise man."

"Of your own people?"

"No. My people have lost such knowledge. I learned it after I began my travels."

"And why did you believe such strange stories?"

"Because they are true."

"And you can sense truth." Kazi thought this as a statement rather

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than a question. "I want to think about you for a while. Return to your apartment. And if you want anything—drinks, girls, someone to answer questions—strike the gong you find there. Tomorrow you will attend the games with me. You will find them interesting."

Imre's things still lay on a bench when Nils entered. He struck the gong softly and very soon a girl appeared to stand silently. "Take these things away," he said. "Their owner is dead."

Apparently the girl understood Anglic because she bent and picked them up.

"Also," Nils added, "I would like the company of someone who can answer questions."

"I will tell the steward," she said, her voice quiet and accented.

Nils went into his own chamber then. Its window faced west and the evening sun shone in. Drawing the heavy curtains he laid down and closed his eyes, seeming to fall asleep at once. But a part of his mind remained on guard, and after a time he knew that someone was coming up the stairs to the terrace outside. It was a young woman, a psi, and she was coming to find him.

He swung his heavy legs over the side of the bed, got up, and walked to the door. The sun had just set, but the western sky was cloudless so that it showed little color other than silver-blue. The girl was just outside, and stopped, facing him as his big torso blocked the way.

"You were resting; perhaps I came too soon." She phrased her thoughts in Anglic, not speaking. "I am Nephthys. My father directed me to come to you, and answer your questions if I am able."

"I'm not tired," he answered in kind, stepping back into the room.

She followed, and sat down gracefully upon a couch. Nils had hardly needed the brief mental identification of "father" that she had given him. Her color, psi, and beautiful fine-boned features indicated that she was Kazi's daughter.

Nephthys could not read Nils's interpretation but her subtle mind anticipated it. "I'm sorry," she continued. "In a sense he is not my father, because the body he wears now is that of a half-brother of mine. But at one time he wore the body of my father—his is the mind, the ego-essence, the continuity of experience, memory and identity, that was my father. And it is as father that I think of him. Do you understand?"

"I'm beginning to. He does age then, but before he becomes old his ego somehow occupies a new body. And he fathers a series of bodies to equip himself properly, the way the lords of the Danes and the Magyars breed special lines of horses in order to have good mounts."

"That's right," she added nodding. "He has two harems, small

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but highly select. One is of beauties, for pleasure; my mother once was one. The other is to provide young men from which he can select a physical successor."

"And does he change bodies for special purposes, as a knight may use one horse to travel on, another to hunt on, and a third for battle?"

"No," she answered, half smiling at the analogy. "The transfer is difficult, requiring days of preparation. He must meditate for days, preparing his mind, and the drugs are unpleasant. It is the one time when those of us who are psi can feel his emotions uninvited, and they are the emotions of a man fighting with death."

Nils moved to another subject. "And I suppose he plans to march north with his armies very soon."

"Yes. How did you know?"

"He concentrated this army of horse barbarians for a reason. And he won't keep them here for long because of the problems of feeding them and keeping them from fighting one another out of boredom and idleness. And he already rules these plains and all the lands to the south, while in the west the mountain tribes of the South Slavs already give him tribute and slaves. And up the Duna to the north and west are the Magyars, whose king has agreed to strike north and west with his army at your father's command, into the lands of the Germans and Bohemians. I learned that from the mind of Janos, the Magyar king. But north of here are the lands of the Ukrainians and Poles, still independent, with rich pastures and farms and large herds of cattle and horses. And a good route to western Europe; there aren't any mountains to cross. But I have only a vague idea of how many men Kazi has."

"I've heard him tell visiting chieftains that he has ten thousand orcs ready to march, and those don't include garrisons that must be left to control the empire. And those ten thousand are equal to twice that number of any other soldiers. And, of course, some four thousand Magyars. Beyond that he has gathered twenty thousand horse barbarians. Their loyalties are to their chiefs, but he has made those chieftains his."

She stopped then, looking at and into Nils. "This place is deadly for you," she said. "Why did you come here?"

He looked intently back at her, and even her dark skin flushed, because his thoughts were very clearly on her and she could not read them.

"Let me ask you instead why your father sent you here," Nils countered, "instead of one of his officers who could answer questions that you can't."

"You know already."

"Only in a general way, and by inference."

"His girl children, if they are

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beautiful enough, he trains as prizes, or gifts, or bribes, for chiefs and kings," she explained. "And once they have accepted us they are caught. For there are no others like us. And among other things we are trained to influence them. But, although you are a man, you are a different sort of man, and not predictable. Therefore, the reason I was chosen instead of another is that father believes he may have to kill you, and that it would be a shame if you died without issue, and your genes lost. And I am the one who is receptive at this time." She looked at Nils without embarrassment. "But as you can see, the thought does not repel me. I have never known anyone like you. You intrigue me. And my father is right; if you must die your genes should not be lost."

Nils's mind spoke again to the girl, but his thoughts were framed primarily for her father, whom he knew must be monitoring them. "Kazi senses an attribute of my mind that he doesn't understand, and he wants it. If not from me, then from my offspring. And I'd give it to him if I could, for it would change him." Nils sat with his mind still for a few moments and then thought again. "Your father has more on earth than any other man, but he finds little pleasure in it. And although he may conquer Europe, he won't rule it long, because he has a death wish."

In his chamber Kazi stared unseeingly out at Mars, the evening star, above the horizon. The thoughts he had just overheard were clear enough in his mind but it refused to analyze them.

XV

In the early sunlight the steward discreetly rang his little bell on the terrace, but Nephthys had already left. Nils looked out the door instead of calling him in. "What do you want?" Nils asked.

"I have been sent to waken you so that you may eat before you go to meet His Holiness."

Nils grinned at him. "I'm awake. Where is the food?"

Calmly and without speaking the steward turned and left. This morning Nils's bath was cool instead of hot. When he had dressed, the quiet girl who had served him the day before brought a tray of soft-boiled eggs, sweetened porridge, berries and milk. He had hardly finished when he heard the steward's little bell again.

As they walked along the terrace and down the stairs Nils could see many orcs on foot in the streets, while among the tent camps outside the city were the dust clouds of thousands of mounted men. Movement was in the direction of a large stone structure, of a type unfamiliar to Nils, in an open space at the end of the city's widest street.

Just outside the courtyard a

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large bronze chariot waited, ornamented with gold and harnessed to four magnificent black horses. In front and behind were elite guards on comparable animals. Nils was directed to sit in the carriage, and after a few minutes Kazi appeared with his two personal guards. He was naked as before, except for jeweled harness and an immense sword and dagger, and rode standing, grim-faced and cold, a huge obscene satyr figure preceded and followed by a roar of voices in the street, and a great surge of emotion that Nils sensed as an overwhelming broth of fear, adoration, and hopelessness.

The large stone structure was a stadium. The open ground around it had row upon row of hitching posts, where thousands of horses stood in a haze of dust raised by hundreds more still being ridden in the area by horse barbarians.

The arena itself was an oval of about two by seventy meters, enclosed by a wall five meters high. Around it rose tier upon tier of seats rapidly filling with armed men. The north-facing side, which held the royal box, was clearly reserved for guests; the rest of it held horse barbarians. Kazi's throne was on a low pedestal. To each side, eighty seconds and a meter lower, were several other upholstered seats obviously for guests. Only one was occupied by Nils. Behind Nils and next to him stood Kazi's two personal guards. Others of the elite guard stood around the perimeter of the box.

Near one end of the field was a stone pillar, eight or ten meters high, topped by an open platform. Squatting chained on the platform was a large beast, a troll, deformed, with a great hump on its back and one arm that was only partially developed and ended in a single hooked finger. A man stood beside it.

Kazi looked at it through Nils's eyes, and his question entered Nils's mind without having been verbalized. "Do you know what it is?"

"A troll," Nils answered. "I was told it's probably a species brought from the stars by the ancients."

"Your teacher was an astute man." Kazi turned his own eyes toward the grotesque. "By nature it's a hunter, broadcasting terror vocally and psionically to confuse its prey. This one comes from inbreeding a voiceless mutant strain, and is only able to echo and amplify emotions that it senses around it. The man beside it is psi, and directs its attention to the victims in the arena so that the spectators can fully enjoy their fear and agony. It's one of the greatest emotional experiences possible to them."

"Can trolls be used as fighters?" Nils asked.

"No. Even with selective breeding they proved too stupid, and they terrify the soldiers." Kazi turned and looked steadily at Nils and into him. "None of this seems

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to disturb you. We'll see how you like the exhibitions; there may be hope for you yet."

The seats were nearly full now; only a trickle of men still moved in the aisles. Nils believed virtually all of the thirty thousand men Nephthys had mentioned must be in the stadium. Kazi stood, raising an arm and sending a psi command. Trumpeters at the parapet raised long brass horns and blew, the high clear note belling loud even in the uppermost seats.

At one end of the arena a gate opened. Four very tall slender men, almost black, strode onto the field, the gate closing behind them. The troll immediately picked up their emotions—uncertainty, caution, a contained fear. They were naked and unarmed. A single trumpet blew, and a gate opened at the other end of the field. Ten tiny figures trotted out, no larger than children. Each carried a stabbing spear about as long as himself, fastened to his wrist by a light chain. The troll's mind turned for a moment to the pygmies, and poured out a cold implacable hatred for the tall persecutors of their race, then picked up the shock of recognition and alarm from the victims.

The pygmies consulted for a moment and then formed a row, trotting toward the tall men, who separated, two running toward each side of the oval. Instantly the pygmy line turned toward two of them. One continued running along the base of the wall. The other turned toward the closed gate, and the line followed him. His fear turned to desperation as he saw himself singled out, and his long legs flashed as he tried to run around them. The crowd experienced his dismay as he was cut off, and he stopped, spun, doubled back and stopped again. Then he took several driving steps directly toward the pygmies and hurtled high, clearing the nearest by a meter, but a broad barbed blade stabbed upward and the flash of shock and terror almost drowned out the flame of pain in his groin and lower abdomen.

The next tall black that the pygmies singled out was a different cut of man. Cornered, he feinted, drawing a thrust from the nearest pygmy. With an explosion of savage joy he grabbed the shaft of the spear, spun, and jerked the tiny man off his feet. The chain snapped at the jolt but he was armed too late. Another spear sliced across the back of his ribs and sank into his upper arm. His surge of rage and frustration filled the stadium as he spun again, slashing and stabbing, and went down beneath a flurry of thrusts.

During the melee another of the tall blacks had rushed into the rear of the pygmies, striking with a calloused foot driven by a long sinewy thigh, killing pouring from him,

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and when he went down he had broken two small necks.

The remaining tall man stood near the center of the arena, watching the five pygmies trot toward him. His mind was a fog of fear, unable to function. For a moment the troll's mind was turned again to the hunters, and the crowd sensed that they intended to play with the last victim. He broke then and ran toward the wall. His leap upward was a prodigy of strength but his fingers found only smooth stone. He fell to the sand and knelt with his forearms across his face, paralyzed. The pygmies killed him quickly in disgust, and the crowd roared.

A gate opened and they trotted out of sight, while a cart rolled across the sand and the bodies were thrown into it. Meanwhile, two men with spades dug a hole in the middle of the arena.

When the cart had left, the trumpets blew again. A horse walked into the arena, dragging a post. Spiked to it and braced were two cross pieces, with a man spread-eagled on them, robust and hairy. The post was hoisted, dropped into the hole, and tamped into place.

"An officer of mine," Kazi explained to Nils, "with a mind given to disloyal fantasies."

The man hung there alone in the bright sunshine, and his amplified emotion filled the stadium with a roiling cloud of hate. A single trumpet sounded and two men walked onto the sand, followed by two others with a small chest fitted with carrying poles. They came from the gate that the victim faced, and the crowd felt his grim recognition, and the defiance and determination that followed.

The two men were artists, and defiance and hatred were quickly displaced. At informal affairs they might have made him last for hours, for he had a constitution like a bull, but now they had a schedule to keep and their purpose was a maximum of agony and emotional degradation while the shadow on their little sundial described an arc of six degrees.

When the stand was cleared again, four robed and hooded figures were led out by a soldier. Two men with megaphones followed.

"They are nuns—members of a religious sect—with very strong superstitions and taboos," Kazi's mind remarked to Nils. "This will appeal especially to my orcs."

Each man with a megaphone explained in two languages what would happen. At each recitation some part of the crowd burst into coarse laughter. The emotional pickup indicated that the women understood the fourth language. The crowd waited expectantly and again the single trumpet blew. Kazi leaned forward intently.

The initial flood of shock and loathing that the troll had echoed

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dropped to a low wash of almost unbearable fascination and dread that gripped the crowd for slow moments, swelling gradually and holding them silent. Then their minds were torn by pain and shrill terror. The guard beside Nils was staring forward, oblivious to anything but the spectacle, his sword arm bent rigidly, his knuckles tight. Nils rose, thrusting back hard with an elbow into the man's groin as he turned, grabbing the sword wrist with steel fingers. He tore the short sword from the man's loosened grip and thrust it into the guard on the step behind him. The disarmed guard next to him, though half-doubled and gasping with pain, wrapped burly arms around Nils's waist and lunged forward throwing him against the throne pedestal.

In that moment Kazi became aware and turned. In a frenzy of surprised fear he struck wildly but powerfully with a huge fist. A metallic taste, and blackness, filled Nils's head as he fell sideways and lay still.

Nils awoke from the wetness of a pail of water thrown on him. His hands were tied behind him, and the side of his aching face lay on packed sand foul with the smell of animal urine. He heard the muffled sound of trumpets, and rough hands pulled him upright to send him stumbling through a gate into the dazzling brightness of the arena. Bars closed behind him and a voice growled in Anglic to back up to them so that his bonds could be cut. He did. A short sword was tossed between the bars and he picked it up. Glancing back he saw three bowmen standing behind the gate with arrows nocked on sinews.

His loose pantaloons and robe were gone. Moving out of line with the gate, Nils stayed close to the wall, waiting. The troll found no emotion to echo, and the crowd, missing this, began to murmur in puzzlement.

A single trumpet blew.

Four great wild dogs came through the opposite gate. They stood for a moment, dazzled and confused by the bright sunlight and the chaos of sounds and smells, then saw him and approached at a tentative trot.

Nils stood relaxed and waiting, and the dogs stopped a dozen meters away. They were hungry but also curious, for they had never encountered a man who acted like this one. The largest sat down on the sand, facing Nils, tongue lolling, and the crowd began to grumble. The dogs looked up toward the noise and anger, forgetting for the moment the curiosity on the sand before them. Things began to land around them—dice, iron knuckles, even helmets. Suddenly the leader stood, teeth bared, hackles raised, looking up into the stands. From behind the bars arrows hummed, striking deeply, and the beasts lay

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jerking or dead, making bloody patches on the sand.

Then nothing. The sun burned down. Nils waited silently and at ease while the stands murmured. At length a single trumpet blew again and a gate opened. A male lion trotted out, in his prime and unfed, and like the dogs stood dazzled for a moment. His gaze settled on the dead dogs, perhaps drawn there by the smell of blood, and then moved to the solitary man. Nils touched its mind and found hunger and anger. It stood for a moment, tail switching from side to side, and then stalked slowly across the sand. Still the troll echoed no fear, and the crowd watchers puzzled. Thirty meters away the lion stopped for a long moment, tail lashing, staring at the man before it, then suddenly rushed forward with shocking speed. Nils crouched, not knowing whether it would spring or simply charge into him.

At the last instant he threw himself sideways, twisting and striking as he fell away. The lion struck the sand and turned, snarling savagely, its shoulder pouring blood from the slash at its neck, and a cheer rose from the stands.

Nils had landed in a crouch but had not quite set himself when the lion crossed toward him again, at close quarters now, boxing at him with a huge and deadly paw. It was a stroke so quick that Nils did not have time to be drawn out before the animal lunged at him. Nils sprang back, striking again, the sword laying back the flesh of the lion's cheek and jaw so that for an instant it recoiled, and Nils attacked, striking again and again in an astonishing fury that stunned the stands. The lion fell to its side with a broken sword in its skull, its sinewy body and hindquarters flexing and jerking, while Nils's arm chopped twice more with a bladeless hilt.

He stood then, chest heaving and sweat dripping from the charge of adrenalin that had surged through him and stunned by the simple fact of life, while the stands came apart with noise. He realized that he was not even scratched, and stood calmly again, the tremor fading from his hands and knees, waiting weaponless for what would come next.

He didn't wait long. When the third trumpet blew a narrow gate opened, and an orc officer entered the arena, tall, muscular, strode several paces out onto the sand, then stood grinning around at the stands and brandishing his sword overhead. From the orcs there rose a storm of cheers and whistles that drowned out the murmurs and scattered hoots from the horse barbarians. The troll focused its psi sense on the mind of the sinewy sun-browned orc, broadcasting the mutilation and slicing it found there. Then it gave its attention to

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Nils, where it found only watchfulness. The orc was still fifteen meters away when a barbarian in the stand threw a long curved sword at Nils's feet. He pounced on it and, as quickly as the lion, charged at the startled officer. For a moment steel clashed against steel while the crowd roared. But only for a moment. Nils's blade sliced through neck and chest, shearing ribs like brittle sticks, the force of the blow driving the man to his knees and carrying Nils off balance so that he staggered and caught himself on one hand in the blood-slimed sand. He looked at it and arose grim and fearsome above the nearly bisected corpse.

And the cheers died. Kazi stood dark and terrible in his box, holding the troll's mind with his like a club—buffeting the crowd with his horrible rage until they huddled cold with shock and fear . . . orc and barbarian alike. He turned to Nils then, and in that instant Nils struck with his own mind through the lens of the troll, a shaft of pure deadliness that he had not known he had, so that Kazi staggered back, consciousness suddenly blacked out by the overload.

Men lay sprawled against each other in the stands, or sat slumped, stupefied. Nils sprinted to the gate and reached a brawny forearm between two bars to grasp and turn the latch. He stepped across the tangle of archers while a burly orc sat slumped against a wall, staring dully at him. Nils traded sheathless sword for the orc's harness and weapons. Sensing the return of awareness in the man he ran him through, then loped across the chamber and up a ramp. The unlocked gate at its end yielded easily to his pull and he was in a concrete chute that led into the open. He loped up that and climbed a gate. A few horse barbarians were outside, none near, moving uncertainly through the rows of horses or staring worriedly up at the stands. Nils could sense the slow return of consciousness behind him. Dropping to the dusty ground he sauntered casually in among the nervous stamping horses, careful to avoid being kicked.

Near the outer edge of the horse park he chose a powerful stallion whose great haunches would not tire too quickly under his weight. Standing before it he tuned to its simple nervous mind, holding its bridle and stroking its velvety nose until it stood calmly, its eyes on him and its ears forward. Then he stepped beside it, reached for the stirrup with a foot, and hoisted himself easily into the saddle.

It guided much like a Swedish horse but it was a lot more—the mount of a chief of horse barbarians, and Nils urged it into an easy trot down a broad dusty lane separating the camps of two Turkish tribes.

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XVI

The sun was a red ball hanging two fingers above the horizon. When the guard on a gate tower could no longer see its blood-colored upper rim he would blow a horn, and that gate would be closed

The road outside the south gate of Pest was crowded with peasants on foot and in carts, and a few horsemen, leaving the city while it was still open, and a smaller number struggling against the current to enter. An impatient merchant threatened them with the bulk and hooves of his big gelding, striking occasionally with his quirt at some peasant head as he pushed swearing through the crowd. Just ahead of him a huge peasant in a ragged cloak half turned, and taking the bridle in a large thick hand, slowed the horse. Incensed at the impertinence the merchant stood in his stirrups, quirt raised. The blue eyes that met his neither threatened nor feared; they simply gazed. Reddening, the merchant sat down again, to be led through the gate at the pace of a peasant walking in a crowd.

A little inside the gate Nils let go the bridle and turned down the first side street that circled inside the city. He had several purposes: kill Ahmed, tell Janos what had happened to Imre, and take Ahmed's psi tuner. But it would be dangerous to try to enter the palace until Ahmed was asleep. The man's psi was remarkably sensitive and alert, and he had henchmen in Janos's guard, two of them psis. And if he detected Nils, either directly or through the mind of someone who saw and recognized him, he could be expected to act instantly to have the northman murdered.

Walking the streets was as good a way as any to kill time until Ahmed should have retired.

Pest was a very large town for its time, with a wall six kilometers around. The narrow cobbled outer street was walled on each side by two-storied buildings broken only by intersecting streets and an occasional small courtyard or dark and narrow passage. Most of the buildings were dwellings—some tenements and some the homes of merchants with their places of business. Near each of the city gates the dwellings gave way to taverns, inns and stables. There the night air was heavy with the pungency of horses and hay, the rancid odor of dried urine from walls and cobblestones, and the faint residual sweet-sour smell of last night's vomit.

Nils took a slow two hours to walk around the outer street and was approaching the gate by which he had entered, when several knights came out of a tavern. They were at that stage of the evening when their inhibitions, never the best, were negligible, but their co-

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ordination was not yet seriously impaired. The smallest of them, oblivious to everything but the gesture-filled story he was telling, almost walked into Nils in the semi-darkness of the street, then suddenly recoiled from the near collision.

"Hey, peasant swine, watch where you're going!"

"Excuse me, sir, I meant no harm."

The knight's eyes narrowed. Truly a very big peasant. "Excuse you? You almost ran into me, you stupid clod." His sword was in his hand. "I *may* excuse you at that though, if you get down on your knees and beg nicely enough."

The knights surrounded Nils now, each with drawn sword. He sensed a severe beating here at the very least, unless he did something, and wanted neither severe injuries nor the attention of the town wardens. He began to kneel, slowly and clumsily, then lunged forward, left hand clutching the sword wrist of his accoster, his right crushing the knight's nose and upper mandible as he charged over him. Stumbling on the falling knight, Nils caught himself on one hand and sprang forward again to flee, but the point of a wildly swung sword sliced one buttock deeply.

Even so, within fifty meters the knights gave up the chase. But in the intersection just ahead was a patrol of wardens, bows bent. One let an arrow go at Nils's belly. Reacting instantly he dodged and ran on a few paces; then another arrow almost through his thick left thigh. He stopped, nearly falling, aware that if he didn't the other wardens would shoot him down. The knights behind him came on again and Nils turned to face them.

"Wait!" one shouted. "I know this man."

And now Nils knew him, not by his appearance, for his beard was shaven and he wore jerkin and hose, but by the picture in the man's mind. He had been one of Lord Lajos's border patrol that had intercepted Nils on the river ice when he had first entered Hungary.

"You heard the clod talk," the knight said. "He's a foreigner. I remember him by his size and yellow hair. The one who escaped from the dungeon last year and killed several of the guards doing it."

"That one! Let's finish him!"

"No!" The man who had recognized Nils reached out, holding the other back by the arm. "He's worth many forints to us alive. We can take him to the palace and have him put in the dungeon for attacking a knight. He won't escape this time—not in the shape he's in. Then we'll send word to Lord Lajos, where he is visiting in the palace. He'll want the foreigner, the king will oblige, and you can bet that Lajos will pay us all well."

Quickly they threw Nils to the

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cobblestones, pushed the head of the arrow out through the back of the thickly muscled leg, and broke the shaft in front of the feathers. Then they pulled it out and stuffed pieces of his rags into the hole to slow the flow of blood.

Ahmed sat straight and intent at his desk. There could be no doubt about it; the prisoner being brought into the palace was the big barbarian, and the palace guard would not be happy about it. He had better act now. Opening a little chest on his desk he took out a sheet of parchment and hurried from the room.

Nils lay in a cell, neither shackled nor locked in. One of the guard knelt beside him, cleaning the wounded leg with big careful hands. Nils's calm gray face showed no interest in the sudden commotion down the passageway.

"The King!" a voice shouted.

"That'll do it," said the guard, standing. "He'll get you out of here."

But Nils did not sit up. He saw the king's mind clearly.

In a moment Janos stood before the cell, his face grim with hate.

"You filth! You swine! The boy would have given you almost anything, but you wanted what he would not give—his decency." Janos turned to the physician who had hurried wheezing behind him. "See that he's able to walk again by the next holiday. I want him to walk to the gallows. And I want him strong enough to take a long time to choke—he'll learn how Imre felt being strangled."

For a moment more he glared at Nils between the bars, then turned and walked swiftly away.

Janos stood at his window, staring unseeingly into the early June dawn. In his grief and bitterness he had not slept. Yet he was past the peak of it and could at least think again. He had liked his big barbarian guard and had never sensed his weakness. But you couldn't know what a barbarian might do.

There was a rap on his chamber door. He turned.

"Yes?"

A guard opened it, apologetically. "I could hear you moving around, Your Highness, and knew you were awake. Sergeant Bela would like to talk to you."

"At this hour? He must be crazy. Let him in." Then added, "But stay with us."

Bela entered and dropped to one knee. The words began to pour out immediately. "Your Highness, I've heard what has been said about the barbarian, and I've talked to him." Without a pause he told about the friendship between Nils and Imre, their joking closeness, of being with them continuously on the barge, and of his farewell to them in the city of Kazi. "And

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Your Highness, I know it's not true. He couldn't have been like that without some of us seeing some sign of it in him. He just couldn't have done it. It would be impossible for him. He says that Kazi himself had the boy killed, on a whim, without anger or hate or any other feeling, and it's true Your Highness, I know it. By my life I swear he is telling the truth."

"Shut up!" Janos shouted. "By your life, eh? Guards, take this lunatic out of here and lock him up." The shaken guard put the point of his sword to Bela's chest and two others entered to pull the knight to his feet.

"I swear it, Your Highness," Bela said in little more than a whisper. "Nils is telling the truth. He doesn't know how to lie."

The door of Ahmed's chamber opened quietly and two guards stepped in and to the side. Janos entered behind them and walked up to the cot of the sleeping Sudanese. Drawing back the blanket he placed his dagger point at Ahmed's throat, laying his hand on the dark arched brow so that the man would not lift his head abruptly.

"Ahmed, wake up."

Ahmed awoke fully alert at the words and knew his danger instantly. He touched the mind of his own bodyguard, fading in death outside his door. The king's mind was cold and hard and he knew it could not be cozened.

"You said you got the letter yesterday. Why didn't you show it to me until tonight?"

"As I said, Highness, I couldn't bring myself to give it to you at first."

"Liar! You have never had a merciful thought. And why did Kazi send it to you instead of to me?"

Never a merciful thought. He is almost right, Ahmed realized. Not for many years. The Sudanese was suddenly tired, and didn't particularly care what happened to him, but he answered anyway, sensing it would do no good.

"He sent it to me so that I could use my judgment as to whether or when to give it to you."

The king's eyes were slitted, his grim face pale in the dawn light. "The barbarian has said that Kazi had the boy killed. How do you answer that?"

"The barbarian lies."

Janos's voice dropped to a hoarse undertone. "And do you remember what you told me after you first looked into his mind, early last winter?"

Ahmed simply looked at the king, too tired to answer. He felt the mind explode at him in the same instant that the blade plunged in, and then he felt nothing as his body first stiffened and slowly relaxed.

Tears of rage washed down the king's cheeks as he spoke to the dark corpse. "You said he didn't

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lie; that he wasn't able to lie. Now I know who the liars were, and have always been, and I sent my son, my boy that was like a son to me, to be killed by him."

He turned to his guards, who stood with their jaws hanging in gross astonishment. "Get this carrion out of here," he rasped. And pointing to the corpse of Ahmed he added, "And see that that one is fed to the swine."

XVII

Nils was not aware of it when, early in the morning, the strong hands of guards under the fussy direction of the bronchial physician lifted him to a litter and carried him from the dungeon to a soft bed. Unaware because he was busy, using a skill that Ilse had taught him, healing himself.

Ilse was aware of the cellular structure of tissues—the kinfolk had tried to maintain all they could of ancient knowledge—and the circulation of the blood was common knowledge. But her knowledge was hardly functional in the sense that she could do much with it. It served mainly as a vehicle for better understanding. But the body itself understands the body, and much better than any physiologist ever did. The ability that her father had developed and taught her was the ability to impose conscious purpose on autonomic physiological processes.

Therefore Nils didn't try to think of a cell or a tissue. He simply fixed his mind totally on a whole and undamaged thigh and buttock, with a completeness of concentration that Ilse had developed through long disciplined practice but that he had mastered almost as quickly as the possibility had been demonstrated to him.

Although his eyes were closed, his other senses received the thoughts, sounds, smells and touches that encountered them. But in his trancelike concentration, that part of his subconscious that screened sensory data for referral to action centers, or to the conscious mind, operated on a basis of passing only emergency messages.

The physician sat beside him, aware that the wisest thing to do was nothing. For despite the profoundness of Nils's trance, he clearly was not in a coma. His breathing was deep and regular, his brow neither hot nor cold, and his heartbeat was strong and rhythmic.

Beginning about midday Nils awakened periodically, aware that he needed water and nourishment. After eating lightly and drinking he would return to his healing trance.

By early on the fourth day healing was far advanced, and Nils walked with Janos to Ahmed's chamber. A servant, with hammer and chisel, broke the hasp on the

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chest they found there. Nils opened it, took out a gray plastic box stamped with the meaningless symbols:

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and flipped the switch.

The instruments once used for "finding" other tuners had used electricity and had long since been inoperable and lost, and without knowing the setting of a particular tuner there was no real possibility of tuning to it. Nils's memory was precise however; he set the coarse tuning, then the fine, and then the microtuner. Finally, carefully, he set the vernier. Then he looked at the number stamped on the case and held the clear picture 37-02-103-8 in his mind, waiting for several moments.

"Nils!" Raadgiver had recognized the mind. The brief wait had been the time necessary to take out the tuner and duplicate the setting Nils's mind had held for him. "Where are you Nils? And what set is that? I've never heard of that number before."

Nils reran the visual sequence of relevant events, beginning with the ambush in the Bavarian forest.

Raadgiver digested the information for a few moments and then began. Kazi had begun his invasion, landing his army from a fleet of ships on the north coast of the Black Sea. His advance forces had easily broken the opposition of local Ukrainian nobles. The Inner Circle had a substantial picture of events. One of the wandering kin, with a psi tuner, had been sent from the court of Saxony to King Vlad of the South Ukraine, in the expectation that Kazi would strike there first.

In spite of the atrocities being committed, Vlad was not seriously trying to defend his kingdom, which was mostly open steppe. Instead, he was pulling back his army of nearly four thousand knights to join with the army of Nikolas of the North Ukraine, numbering about twenty-five hundred. They hoped to make a stand in the northwest, where the grasslands were mixed with forests, providing an opportunity for a cavalry guerrilla and the prospect of help from the neighboring Poles.

"The best army in Kazi's way," Raadgiver continued, "is that of Casimir of Poland. It has been a curse to the Balts, the Ukrainians, the Saxons and Prussians for years, and when fully gathered numbers perhaps six thousand. Most important, it is well disciplined and well led. Casimir is gathering it now, and the Prussians and Saxons are gathering theirs. We have spread the word everywhere.

"But now there is another invasion, in northern Poland, by the northmen, your own people. There are still only a few, perhaps one or two hundred, holding a tiny area on the coast, but their position is impossible to attack on horseback,

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and a force of knights sent against them on foot was butchered. And more are expected, for they have stolen several Polish and Danish ships.

"When enough have landed they will try to break out of the section they hold now, so Casimir is sending a strong army that will attack them when they move. And the King of Prussia is holding his army to fight them, too. And by holding these armies from joining with the Ukrainians, the neovikings are destroying what little chance we have against Kazi."

Raadgiver read the question in Nils's mind. "It was the winter that caused it," the counselor explained. "In Denmark it was the worst ever; in the northlands it was so bad that the tribes felt they could not face another. We captured several wounded when Norsk raiders took a Danish ship, and I questioned them and read their minds. The three tribes have joined in this and plan to move all their people before winter, if they can.

"It's not northern Poland they're interested in. They hope to cross the continent to the Mediterranean. They'll never make it, of course; all of them together are far too few. They underestimate the Poles and Germans. But they are weakening us at a critical time."

Nils interrupted. "Do you know who their warchief is?"

"A man called Scar Belly," Raadgiver replied.

"Ah, Björn Ärrbuk! I would rather fight the troll again, or even the lion. And he is the greatest raid leader of the Svear, as my clan knows by painful experience. You would take the tribes more seriously if you knew him better.

"Now listen to me; this is very important. The tribes can be your salvation instead of your ruin, if they are led against Kazi. But you'll have to keep war from starting between the Poles and the tribes—keep them from wasting each other. For the tribes do what few armies do. They fight on foot more than on horseback, and stealth and cunning are their tactics.

"Once you told me that one of the Inner Circle, a Jan Reszke, was counselor to Casimir. Is he still?"

"Yes."

"Good. Tell him that I'm coming north to turn the tribes eastward, against Kazi. Tell him to do all he can to keep Casimir from attacking them. Have him urge Casimir to send as many troops as possible against Kazi."

"But how can you get the tribes to abandon their plans," Raadgiver asked, "and follow you against Kazi? You're only a youth, and an outcast at that."

"We have a legend in the north," Nils answered. "Once when the tribes were young the Götar made war on the Svear, and the Götar were stronger so that it seemed

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they would destroy and enslave the Svear. But then a young warrior arose among the Svear who became a raid leader and led several brilliant raids. In one they surprised and killed the chief of the Götar and several of their clan chieftains.

"This demoralized the Götar and heartened the Svear, so that the tide was turned. And then the young warrior disappeared, but in their successes no one missed him. For several years the Svear prevailed, burning villages and haystacks and destroying cattle, as the Götar had before them, until it appeared that it would be the Götar who would be destroyed and enslaved.

"And then a young warrior among the Götar was made a raid leader, and led a daring raid which left the chief of the Svear dead, along with several of their principal raid leaders. And it was then that both tribes realized that this was the same youth who had saved the Svear earlier, but until he wanted them to they had not been able to recognize him. And he said he was not of any clan or tribe, but was simply a northman.

"Then he called a council of all the warriors of the three tribes, and they came without weapons, as he told them to. And in the council he gave them the bans, setting limits on the wars between tribes and the feuds between clans, and they approved them. They would still fight, for that was their nature, but they could not take each other's land. They could kill men, but not women or children. They could not burn barns or haystacks. They could steal livestock but they could not kill what they could not drive away. And they could kill in vengeance only for specified wrongs.

"And all the clans agreed to this, and praised the young warrior, and all the warriors lined up to honor him and shake his hand. But one warrior hated him because he did not want to change, so he hid a small poisoned knife in his breeches. And when he came up to him he struck him with it, killing him.

"Then, instead of making a burial mound, they put the body in a canoe and let it float on the river, although they didn't know why. And it floated down the river to the sea and out of sight.

"And then they realized that no one knew his name, so they called him The Yngling. In Danish that means 'a young man.' Among the tribes that term has not been used since, for it can only be used as his name; we say Ungman or some such instead.

"Of course the story isn't true, although it may have some limited basis in fact. And the tribes tell it as legend rather than history. But they have the idea The Yngling will come in a time of danger. Maybe this is such a time."

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For several moments Raadgiver's mind framed no comprehensible thought, and when it finally did, it was with a sense of awe. "I'll send one of the wandering kin, Danish, who will be able to talk to them. But will they believe?"

"There is nothing to believe or disbelieve," Nils told him. "It's only an idea to prepare them, so that they'll pay more attention to me.

"Now here is what I'll do before I start north. The Magyars are fighters, well mounted, and it's likely that some of their nobles are good war leaders. I'll send them northeast over the mountains to join the Poles and Ukrainians. Let the Poles know they're coming as allies. Can you give me the name of one of the kinfolk near here, and where I can find him?"

Nils followed Raadgiver's mind while the counselor looked into the ledger where he made an effort to list the names and whereabouts of all the more settled kin. His eyes stopped at a name and location for Nils to read.

"If he is willing and able to go with the Magyar army," Nils thought, "I'll give him this psi tuner. That will give them contact with the Poles and Ukrainians. He'll get in touch with you later for the settings of any tuners that he may want to contact. Do you have anything more to tell me or any questions to ask?"

"Nothing more," Raadgiver thought, physically shaking his head. Behind the mentally framed words Nils sensed a mixture of depression and relief. Raadgiver had been a prime mover among the Inner Circle for a long time, and now found himself reduced to following instructions. Yet since Kazi had begun to march he had had no hope, acting only out of habit. But now he felt the beginning of hope, however irrational it seemed.

They saluted one another and Nils replaced the tuner.

During the voiceless conversation Janos had sat puzzled and was beginning to be irritated, understanding only that Nils was sitting there silently, ignoring him. When it was over, Nils turned.

"Your Highness," he said, "I can do what Ahmed did. I can look into minds, and speak without sound to others like me. "This"—he gestured to the instrument—"is a means by which two like me can speak to one another with the mind at great distances. Ahmed was not only a counselor loaned to you. He was also a spy in your palace, reporting everything to Kazi through this. I was using it now to speak with my teacher on the shores of the northern sea."

There was a copy of an ancient topographic map of Europe on the wall, with the modern states outlined on it. Nils walked over to it. "About here is where Kazi's army is now, with thirty thousand men," he said pointing. "The Ukrainians

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are far too few to hold him, even if the Poles arrive soon to help them. But if you took your army over the mountains, here, your combined forces could delay and damage Kazi until other kings can gather theirs."

Janos frowned. "But Kazi's army is more powerful than all others put together. Otherwise I'd never have allied myself with him."

"In open battle, yes." Nils answered. "But in land with forests you could work as small units, striking and then running to cover."

Janos looked sharply at him. "And who asked for your advice?" he asked coldly. "Have you forgotten that you're a foreigner of common blood?"

Nils grinned. "I'm young but not foolish, Your Highness. Yet I do indeed advise," he continued more seriously, "and deep in your mind you know my advice is good, because if you don't combine armies Kazi will eat you separately. But you are a king used to listening to advice only when you've asked for it, and so my boldness offended you. But I'm only a foreigner, a commoner, a barbarian, and a mere youth to boot. You wouldn't have asked for my advice, and because I thought it was important, I had to give it uninvited."

The king stared at Nils for a moment, and a smile began to break his scowl. "You're a scoundrel, barbarian," he said, grasping the warrior's shoulder, "but allowances must be made for barbarians, at least for those who are giants and great swordsmen, who can look into the minds of others and speak across half a world, and heal dirty wounds in three days. You're right. We must move, for better or for worse, and if need be we'll die like men, with swords in our hands. And you must come with us, and I'll continue to listen to your unasked for advice."

"Highness," Nils said, suddenly solemn, "with your permission I'll go instead to my own people and lead them against Kazi. They are not numerous, but they fight with a savagery and cunning that would warm your blood to see."

"All right, all right," the king said, shaking his head ruefully. "I bow to your will again. If your people are all like you, they probably can talk Kazi out of his invasion."

Janos sent riders ordering the nobles to gather at the palace on the sixth day, which was as soon as the more distant could possibly arrive if they left at once and rode hard. The orders specified foreign danger to the realm, in order that there would be no delaying by independent lords who might otherwise be inclined to frustrate him.

After two more days spent resting and healing, Nils submitted his newly knitted thigh and hip to a saddle and rode a ferry across the

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Duna to the town of Buda. He didn't want to send a messenger to Zoltan Kossuth, the psi, in case the request be interpreted as an invitation to a trap.

Nils led his horse off the ferry and spoke to a dockman. "Where can I find the inn of Zoltan Kossuth?" he asked.

"Would that be the Zoltan Kossuth who is called the Bear? Turn left on the outer street. His is the inn just past the south gate, under the sign of the bear, and the stable next to it is his, too. It's the best inn in town, if you like your inns orderly. The Bear is notorious for throwing out troublemakers with his own tender hands, although"—he sized Nils up with a leer more gaps than teeth—"he would have his hands more than full trying to throw you out. Not that I'm calling you a troublemaker, you understand, but if you were, that is."

Nils grinned back, punching the man lightly on the shoulder, mounted, and started down the cobbled street. "And the fare is good for both man and horse," the dockman shouted after him.

Nils strode into the inn, which was quiet at that hour. The keeper was talking with two men who were telling him more than they realized. Tuned for it, Nils had sensed the man's psi before reaching the stable, but engrossed as the Bear was in the words and thoughts he was listening to, he wasn't aware of Nils until the barbarian came through the door.

Zoltan Kossuth would never be admired for his beauty. His round head had no hair above the ears, but his black beard, clipped somewhat short, grew densely to the eye sockets, and a similar but untrimmed growth bushed out obstreperously through gaps in the front of a shirt that had more than it could do to contain an enormous chest. He was of moderate height, but his burly hundred kilos made him look stubby.

Just for a moment he glanced up balefully at the strange psi, then seeing a servant move to wait on Nils he returned to his conversation.

Nils sat in an inner corner, nursing an ale and a bowl of dry beef. He felt no need to interrupt the Bear's conversation but saw no point in waiting needlessly if the innkeeper's interest in it was not serious. Therefore he held in his mind for a moment a clear picture of the Bear holding a gray plastic psi tuner, at the same time naming it in case the Bear would not recognize one by sight.

Zoltan Kossuth scowled across at Nils, excusing himself from the table, and disappeared into a back room. "Who are you and what do you want?" he demanded to know.

"I am Nils Järnhand, on business of the Inner Circle and the king."

This alarmed the Bear. Covering his intentions and actions with dis-

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cursive camouflage he walked to a crossbow hanging on the wall. "I'm not aware that a king of Hungary has had dealings with one of the Inner Circle since old Mihaly, counselor to Janos I, was murdered by an agent of Baalzebub when I was a boy." The Bear cranked the crossbow and set a dart to it. "What I would like to know is how you can be on business which is both of the Inner Circle and of Janos III."

"Put down your weapon, Innkeeper." And Nils ran through his mind a rapid montage of Kazi, of Kazi's guard lopping off the head of Imre Rakosi, and of vile acts in the arena, and the identities of all were clear, although Zoltan Kossuth had not known what Kazi looked like until that moment. Then the picture was of Janos leaning over a cot, slicing open the neck of Ahmed, whose identity also was clear.

The innkeeper was a suspicious man, for a psi, but he accepted this intuitively. Removing the dart he pulled the trigger with a twang and hung up the crossbow. "And what do you want of me?" he asked.

When Nils was finished at the inn he resaddled his horse and left Buda through the west gate, riding leisurely toward the castle of Lord Miklos, which dominated the town from a nearby hill. Miklos was the town's protector, deriving his wealth to an important degree from its tribute.

Prairie flowers bloomed along the climbing dusty road, and the moat surrounding the castle was green with the spears of new cattail leaves that had crowded through the broken blades and stems of last year's growth. The shallow water, already thick with algae, lost as much to the sun in dry weather as it gained from the overflow of the castle's spring and the waste that emptied into it through an odorous concrete pipe.

The countryside was at peace, the drawbridge down, and the gatekeepers at ease. "Who are you, stranger, and what is your business?" one called genially as Nils drew up his horse at the outer end.

"I want to speak to Lord Miklos. My name is Nils."

The man's mind told Nils that he might not remember such an outlandish name long enough to repeat it to his master's page.

"Tell him it is the big barbarian he rescued from Lord Lajos's castle," Nils added.

A grin split the guard's brawl-sculptured face, and he saluted Nils before he turned to carry the message. Apparently the ill-feeling between the two nobles was shared by their knights.

Lord Miklos was sitting on a stool, stripped to the waist, when Nils was ushered into his chamber. One servant was washing the nobleman's feet and ankles while an-

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other toweled his sinewy torso. "Ah-ha, so it's you. Sit down my friend. I've been in the fields this morning inspecting the work, and that's a dirty occupation in such dry weather. I'm afraid our talk will have to be short, as my vassals are waiting to meet with me at the noon meal. For business. Have you come to join my guard?"

"No, m'lord." Nils looked at the servants and spoke in Anglic. "I have news for your ears alone."

The old knight straightened and spoke to the servants, who speeded their work and left. "What is it then?" he asked.

"I've come to tell you of the king and Baalzebub, but there's quite a bit of it and it will take time. Also, it's best if King Janos doesn't learn about my visit here."

"Plague and death!" Miklos strode to a bell and rang it. In a moment a page entered. "Lad, I don't want to be disturbed until I ring again. Tell my guests I'll be delayed. Tell the steward to hold the meal . . . no, tell him to feed the guests. I'll come later."

The page left and Miklos turned to Nils. "All right, my big friend, tell me everything."

Speaking Magyar, Nils told him of Kazi the Conqueror, who was the basis in fact for Baalzebub, of Kazi's military strength and psi power, and of his recent invasion.

"And you say this creature has lived since ancient times and looks into men's minds?"

"Yes, and there are others who can read minds," Nils answered. "I'm one of them." Without giving Miklos time to react fully to that, Nils told him of Janos's visit to Kazi's city some years earlier, of his conviction that Kazi could not be withstood, and of his decision to ally himself to Kazi when his time came to assume the throne of Hungary. Then, without being specific or complete, he told of the kinfolk, of his commission to murder Kazi, and of his brief service with Janos. And he told of the counselor, Ahmed, who also was a spy set to report on Janos through the psi tuner.

The old knight's eyes were bright with anger as he arose from his chair. "So this Ahmed looked into our minds when we had audiences with Janos. And told him what we thought to keep secret. A lot of things are becoming clear to me now," he said grimly. "We'll have to overthrow him."

"Wait, m'lord, let me finish. The king has killed Ahmed with his own hand."

Miklos sat down again, confused and fully prepared to listen.

Nils told of his friendship with Imre Rakosi, of Kazi's demanding the boy, and of their going.

"And Janos sent him? The man is gutless!"

Nils went on to tell of Imre's murder. "But I was lucky enough to escape, and returned to Pest to tell the king. And Janos cut Ahmed's throat. Then, using Ahmed's

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psi tuner I spoke with my teacher, who lives near the northern sea. He told me that Kazi has struck north against the Ukrainians. Casimir of Poland is gathering his army to join the Ukrainians, but he in turn has been invaded by barbarians from the north. So he can send only part of his army against Kazi."

Miklos got excitedly to his feet. "Why man, we should go. There are no finer fighters in the world than Magyars! . . ."

Nils interrupted. "That's what Janos plans to do. It's the reason he's called for his nobles. 'We must move, for better or for worse,' he said, 'and if need be we'll die like men, with swords in our hands.' "

Miklos stared. "Janos said that? *This* Janos?" His gaze sharpened. "Why did you come here to tell me this when I'll hear it from Janos himself in a few days? And why did you ask that your visit here be kept secret?"

"Because you've distrusted and despised Janos and might not believe him, while you might be willing to believe me. And you'll be the key man among the nobles. For you are not only the most powerful of them—you're also the most respected even by your enemies. If you correspond with belief, the barons will follow. But if Janos knew I took it upon myself to come here, he'd be mad. My forwardness has already tried his patience."

Miklos looked shrewdly at Nils. "I'll bet it has at that. I look forward to seeing more of you, northman, for you're as crafty as you are strong, and I enjoy craft in an honest man."

"You'll be disappointed then, m'lord, because I'm leaving tomorrow. The barbarians distracting Casimir are my own people, and I have to try to bring them in with us instead of against us. If you see me again it will be with them, the tribes of northmen, who, I have to tell you frankly, are the greatest fighters in the world."

It was then Miklos tested Nils. "You've said a lot today," he thought, silently but deliberately, "most of it hard to believe, and asked me to accept it as true. You've asked me to trust Janos, a man I've always distrusted with good reason. Tell me, can you really read my mind?"

"Yes, m'lord, and the honest doubts that go with the thoughts."

Miklos relaxed. "That settles it. I'll do as you ask." He put out a big knobby hand that Nils wrapped in his.

"Thank you, m'lord." Nils started to leave, then turned at the door. "And sir, don't underestimate the king. His mind does prefer the devious, just as you once told me, but he is no coward."

That evening Nils introduced Zoltan Kossuth to Janos, and the Bear showed no sign of surliness,

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for he was nothing if not shrewd. And they talked until late.

In the morning Nils rode north from the city astride a large strong horse, a prize of Magyar horse breeding, and with him rode Bela, and a tough guard corporal also named Bela, differentiated by the guard as Bela One and Bela Two. Fourteen days later seventeen hundred Magyar knights left the fields outside Pest, with Janos and the western lords. By the time they reached the northeastern end of the Hungarian prairies and were ready to start over Uzhok Pass for the Ukraine, they had been joined by the eastern lords with twenty-one hundred more.

XVIII

A strip of wet meadow roughly half a kilometer wide bordered the stream. Several knights stood looking south into it, hands on sword hilts, watching three men riding toward them. One of the knights turned toward an awning stretched between young aspens and shouted in Polish. An officer ducked out from beneath the canopy, moving easily despite his heavy mail shirt, buckling on a sword. His helmet covered his ears and the back of his strong neck, and from the temples two steel eagle's wings projected.

The three men had approached near enough now to be recognized as a mixed lot. Two were knights, lanceless but wearing mail shirts and swords, their shields strapped behind one shoulder. The third was clearly one of the northern barbarians, a shirtless giant thickly muscled, with his blond hair in short braids. From the top of his steel cap a wolf tail bobbed as he rode. All three were well mounted, with a string of spares behind, and horses and men looked to have traveled a long way in a hurry.

The officer swung onto his mount. "Halt!" His command was in Polish but the meaning was plain enough. "Identify yourselves!" That was not so clear but could be guessed.

Bela One spoke loudly in Anglic. "We are from the court of Janos III, King of the Magyars, who has gone with his army to fight the hordes of Baalzebub. We have come to see Casimir, King of the Poles."

The officer scowled. "You have a northman with you."

"True. He has been in the service of Janos," Bela replied, "and has come to lead the northmen against Baalzebub. His name is Iron Hand, Järnhand in his language, and your king knows of him."

Nils spoke then, his voice soft but easily heard. "You mistrust us. We'll give you our weapons, if you want; we don't need them here. And send word to Jan Reszke that we've arrived."

The hard-eyed knight stared

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narrowly at them for a moment, then turned and shouted abruptly toward the awning. A younger officer emerged, lacing his mail shirt. Several other knights rode out of the woods, their faces curious and distrustful.

"Your weapons," the officer ordered in Anglic. The two Belas turned worriedly to Nils, but he was unbuckling his harness so they reluctantly surrendered theirs. The officer led them through a belt of woods then, and out into an open heath that sloped gradually toward a marsh some five kilometers away. On the far side of the marsh, which seemed two or three kilometers across, Nils saw a long broken line of low dunes, dark with pine, where he supposed the northmen were.

A stream flowed out of the woods nearby and toward the distant marsh. On both sides of it were orderly ranks of colored tents and tethered horses, covering hundreds of hectares. They rode among them and soon saw what they knew must be the tent of Casimir. Like the others its canopy was brightly striped and the sides were rolled up to let the air through. But its diameter was at least twenty meters, it was surrounded by a substantial open space, and the banner above it was larger and stood higher than any other. Their guide stopped them a short distance away and one of their escort rode ahead. Some knights came out of the king's tent and squinted suspiciously at them through the bright sunlight. Then one swung onto a saddled horse and rode the few score meters across to them. He stared at Nils truculently.

"Dismount," he said loudly in Anglic, "and follow me." The three swung from their horses and started forward. "Just the northman," the knight snapped. "The other two swine stay here."

Nils strode over to him and looked up through slitted eyes. "Listen to me, knight, and listen carefully." His voice was soft but it carried. "I've had too much hard mouth since I came here and you'd better not give me any more. Either my friends come with me or I'm going to pull you off that horse and break your neck."

The two men locked eyes, one an armed and mounted knight in linen shirt and spurred boots, the other a barefoot unarmed youth on foot, his torso smeared with sweat and road dust. For a moment the knight's hand hovered above his sword hilt as he looked back toward the king's tent, but Casimir had emerged and was looking across as if waiting for them. The knight swore in Polish and turned his horse. "Come then, all three," he said hoarsely, and they led their horses toward the king while the escort that had brought them looked at one another impressed.

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In his prime Casimir had been a famous fighter. He was still a strong man, but so overgrown with fat that he had to be lifted onto his horse. But his brain wasn't fat, and the fiery recklessness of his youth had given way to an uncommonly cool and logical pragmatism. He was not yet forty, and given a reasonable life span he expected to rule much more than Poland, or had expected to before Kazi entered the picture. He stood in a robe of bleached linen embroidered with gold thread, and a light golden circlet sat on his brown hair. One fat hand, wearing a huge signet ring, rested casually on the golden hilt of a dagger, not in threat or caution but as its natural resting place.

Jan Reszke, his chief counselor, contrasted sharply. A gangling stork of a man, his nearly two meters of height made him one of the tallest men in Europe, but he weighed much less than Casimir.

As they neared the king the knight barred their way with his drawn sword.

"Who are you and what do you want?" the king asked in Anglic, although he'd already been told.

"I am Nils Järnhand, warrior of Svea, recently in service to King Janos of Hungary. My two friends are from Janos's guard.

"I have visited the court of Baalzebub, fought in his arena, and saw his vileness. My greatest feat was escaping alive.

"I've been told that you're sending an army against Baalzebub, and would send another except that the northmen are landing on your shores so that you're holding it to strike them.

"Word was to be sent to the tribes that I'm coming. Baalzebub's land is rich. I've come to take the tribes against him, and when he's destroyed we'll take his land." Nils folded his thick sinewy arms across his chest and looked calmly at the king, his speech finished.

"And why should I believe you can do this?" Casimir asked.

"You're not damaged if I fail and a lot better off if I succeed."

"You mistake my meaning, barbarian," Casimir said, "or misuse it, more likely, if what I suspect of you is true. Never mind. Most likely you'll have a chance to prove yourself."

Nils shot a question to Jan Reszke. "Yes," Reszke thought back, "he knows—has known for years. He deduced psi without any previous knowledge that it existed, from listening to my council and considering the possible sources of my knowledge. Since then I've shown him the tuner."

Casimir glanced from one psi to the other, his narrow full-lipped mouth amused in the gold-streaked brown beard, then spoke in Anglic. "Guard Master!" The surly knight stepped forward hopefully, his sword still in his hand. "Jan Reszke and I will confer privately with

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the northman. I don't want to be disturbed unless there is an emergency. Meanwhile see to the comfort of these two knights." Casimir gestured toward the Belas. "They have ridden hundreds of kilometers in haste and I doubt they've had a proper meal in days. When they're refreshed, quarter them with my household knights. And Sieben," he added, gesturing toward Nils with his head, "you have called the barbarians a pack of wolves. Don't curse the wolves 'til you see whether they bite."

They went into the royal tent and Casimir lowered himself onto a cushioned seat, gesturing toward two seats facing his. "Sit there. I want to see your faces while we talk. I'll ask again the question that you didn't answer when I asked before. Why should I believe the northmen will follow you? And why should I believe they will fight Baalzebub at all for them out? And finally, why should I believe they can make a difference, as few as they are?"

Nils looked squarely back at him. "The tribes select their leaders. Chiefs are chosen for their wisdom and justice, and may be freeholders or warriors, although usually they are warriors. Raid leaders are chosen from among the warriors for imagination and cunning. War leaders are selected from among the raid leaders, and often they are not chiefs.

"Now the tribes are migrating, and I know something about the world they are entering; much more than almost any of them. Undoubtedly they've selected a war chief already, but they'll listen carefully to anyone with experience here. Also, you know what I am and the advantage it gives me.

"And finally, I expect to go to them with your oath that you will let them pass, if they in turn give their oath to join you against Baalzebub. And if they give it they'll keep it. Besides that, I will tell them truthfully that if they don't fight him now, with powerful allies, they will have to fight him later with little help and no hope.

"As for their being important help—haven't some of your people fought them? Why did you bring this army here instead of sending a small force? When all the warriors have landed, there should be two thousand of them, or more. And if you chose ten of them by lot you couldn't match them with your ten champions. And our freeholders will fight too, when the time comes. They are skilled with bows and familiar with swords.

"If you furnish them ships they will surely ally themselves with you, and they could be landed faster and be ready to move sooner."

"All right," said Casimir. "You sound as if you might do it at that. Jan had already made a strong case for you, and if I didn't respect

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his judgment I wouldn't keep him around. Sometimes a man has to accept risks to try to avoid certainties. As for ships, I've already furnished some unwillingly but I can send more. I'll order them landed to take on guides from among your people. But see to it that they are met peacefully and the crews treated well. I don't know how many there are in our ports or how long it will take them to get there, but I'll send a messenger right now. When will you go to your northmen?"

"Let me ask a few questions, feed me, and I'll go," Nils answered. "But let my companions stay with you, for among the tribes almost no one knows Anglic. And among your people they'll find customs much more like theirs. They came with me only to help discourage robbers along the way."

"Tadeus!" Casimir bellowed, and a page hurried into the tend. "See that food is prepared for the northman and me. And have a fast messenger sent to me, prepared for a hard ride to Nowy Gdansk. Go!" He turned to Nils as the boy hurried out. "And when you talk to Jan, talk out loud."

"Jan," said Nils, "ask Raadgiver to have Danish ships sent to harbors in Götaland and Norskland, to help move the tribes. It may be hard to do but it's very important. And have you heard from the Magyars?"

"Yes. This morning they started across the pass that separates their land from Ruthenia, in the Northern Ukraine."

"And what about the fighting?"

"We've lost contact with our man who was with the Ukrainians. He's probably dead. Yesterday we had a message by courier, but it was a week old. Our army under Lord Bronislaw had met Ukrainian troops. The Ukrainians have tried to avoid large battles while hoping for help, but squadrons have been trapped and butchered. And what the enemy does to the people can hardly be described."

"How large are the combined forces against Kazi?" Nils asked.

"The Ukrainians have about six thousand and the Magyars four. There are another four thousand with Lord Bronislaw, including nearly a thousand Saxons under the banner of Duke Hermann. In addition we have three thousand here, and Albert of Prussia is holding fifteen hundred against the northmen, all of which can be sent against Kazi if you're successful. Some of the independent German nobles are raising their armies too, but it's hard to know how many hundred they'll come to or what they'll do."

Casimir interrupted. "You've been in Baalzebub's land. Do you know anything about his army? How large it is or how good?"

Nils looked at him for a moment

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before answering. "It numbers about thirty thousand and it's supposed to be very good. Twenty thousand are horse barbarians, eastern tribesmen who have allied themselves with him, and they're tough at least. The other ten thousand are his personal army, men he calls orcs, who are proud of their brutality. I expect the horse barbarians are very dangerous in the open, but it may be they won't fight as well in timber where they'll have to get off their horses as often as not. The orcs are probably as good on foot as on horseback. And some of the orc officers are psis. If they have tuners they'll be able to coordinate their units, which will increase their advantage."

Casimir pursed his lips silently. "You make the odds seem pretty bad. Why wouldn't it be a good idea to surrender?"

"His orcs didn't get the way they are by accident. They're reflecting their master. Kazi—Baalzebub that is—doesn't care about ruling. He wants to debase and destroy, and public tortures are his entertainment. You'd be better off dead than captive.

"His strengths are obvious, but he has weaknesses, too. At one time he must have been a thinker and planner, but now he doesn't seem able to hold one matter in his mind and concentrate. And he acts recklessly. One of his whims turned the King of Hungary from a reluctant ally into a total enemy. So we're four thousand stronger and he's four thousand weaker.

"I won't try to mislead you though. With his power he can afford mistakes and still win. But I honestly believe we have a chance, and it's the northmen who make that chance real." Nils turned his eyes to Jan Reszke. "Has Raadgiver had a man among the tribes?"

"Yes, and he's reported to me. He spread the word among them that The Yngling was coming from the south, to lead them to a land of rich grass and fat cattle. He's a master. They called a council and listened to him. Now they're waiting to see what happens."

"I'll eat and go then," Nils said. "But let me have three squires to use as messengers."

Nils walked rapidly through the marsh, his bare feet automatically finding the firm places, where there were any, and slopping nonchalantly in the water or ooze where there weren't. Three young Poles hurried behind, apprehensive, muddy, and unhappy.

Nils's eyes searched the forest edge ahead. Their approach was open and it was certain they'd been seen. He had spotted brief movement once, and could sense watchfulness, and now he began to pick up the quiet thoughts of men speaking.

"It's one of ours. Do you know him? No. From here he looks big;

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if I knew him I'd recognize him. What are those outlanders with him? He doesn't seem to hold them prisoner. Knut, go and get Leif Trollsvärd; there's something strange about this.

"My blood. He *is* a big one. If he were to wrestle a bear, I'd bet against the bear."

The edge of the marsh was a ribbon of slough into which a pine had fallen from the forest's edge. Nils sprang to it and picked his way through its branches toward the high ground. The tallest of the squires sprang too, missing with a splash. The other two simply waded in glumly.

"Halt!"

The squires stopped abruptly in surprise, over their knees in the dark water. The forest was fringed with alder shrubs and they hadn't seen the two warriors who now stepped out to the water's edge.

"What have you got there?" The speaker's blond beard hung in two short braids and over his steel cap was the headskin of a bull seal. Both the totem and the accent were unfamiliar to Nils, and he supposed they were Norskar.

"They are messengers loaned to me by Casimir, the Polish king."

The warrior's brows raised. The Polish king? That would be their chief, he thought. "Well tell your messengers to get out of the mire before they sink out of sight," he said. "We were put here as sentries, and while three Polish sprouts in the keeping of a warrior hardly amount to an attack, you'd better wait here a bit anyhow. I've sent for our group leader."

Nils and the young Poles walked into the woods with the sentries and sat on the ground. Within a minute two more warriors of the Seal Clan trotted down through the pines, and Nils arose. Leif Trollsvärd was a rather tall young man whose thin skin and sharply defined muscularity gave him a startlingly sinewy and aggressive appearance. His dark complexion and black hair looked more Mediterranean than Scandinavian.

"Have you got prisoners there?" he asked Nils, and even his words were quick.

"No. They are messengers loaned to me by Casimir, the Polish king."

"And who are you? I've never seen you before."

"I am Nils Järnhand, of the Svear, and I've never been here before. I've come from a kingdom far to the south, the land of the Magyars, to speak to the war council."

The group leader looked Nils over from head to foot, his sharp eyes feeding a score of details to his cerebral servomechanism. "From the south. Come then. I'll take you to Björn Ärrbuk, our war leader. He is of your tribe." Leif Trollsvärd turned and loped off, followed by Nils and the apprehensive squires.

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The seaward dunes too had long since stabilized and were forested, and the camp of Björn Arrbuk was one of them. The war leader stood on the beach watching a captured Polish ship work its way around a sand spit off shore.

He turned as they approached. "Ha, who is this?" he asked. "And what are those?" he added, looking at the Poles.

"They came across from the Polish camp. Him, too," Trollsvärd said, indicating Nils with his thumb. "He is Nils Järnhand of your tribe, who has come here from the south and wants to speak to the war council." With that the Norwegian turned and trotted away into the woods.

Björn Ärrbuk was of middle height and middle age, his barrel chest, short thick legs and long arms giving him an apelike look. Even his hair was an orangutang red. A scar crossed his abdomen diagonally from the lower left to the rib cage, providing his surname. A doctor might have wondered how he survived such a cut without modern medicine, or surviving, how he could have become fit again. But he was fit, and enormously strong, with the vitality of the bear that was his totem, and given to impulsive wrestling with any warrior at hand.

He glanced sideways at Nils. "I've seen you somewhere," he said, and turned to watch the ship again. Its sail was furled against an offshore wind, and strong arms pulled the oars. "It's from Svea," said the war leader. "Of the three tribes six hundred warriors have landed, but we'll never get all the people ashore before winter comes unless we steal more ships. And that's costly business. They're heavily guarded at the docks and flee from us at sea."

"The King of Poland is sending us ships," Nils replied. "They'll land here in a few days, for guides to take them to the tribes so we can land people faster. And it may be that Jørgen Stennaeve of the Danes will also send ships, to Norskland and Götaland."

Björn Ärrbuk turned and stared at the tall warrior beside him. "The king of the Poles? You must be mad. The king of the Poles has brought an army, to try to wipe us out when we leave this place."

"I'm not mad," Nils said calmly. "I've just talked with him and he gave his oath . . . but it's not a simple story, and he wants something in return. I came to tell it to the war council, but, if you want me to, I'll tell it to you now and again to them later."

The burly chief stepped back from him, astonished and a little irritated, his body half crouched in unconscious response. "What's your name again?" he asked at length, straightening.

"Nils Järnhand. You were at the ting a year ago when I was ban-

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ished. When I was a sword apprentice I'd struck a warrior and killed him. A great deal has happened to me in that year; I've traveled far and learned a lot."

"I remember. Some of the Eagle Clan believed we should have decorated a pole with your head, and that Axel Stornäve favored you because you were of his clan." Ärrbuk chuckled. "Actually, Kalle Blåtand was a bully, and even in his own clan there were many who thought he had gotten what was overdue him. Had the law allowed we might have left you off free." He turned serious then. "What you say about the Polish king is interesting, but it may be you've been tricked. I'll call the council—all that have landed. Isbjørn Hjeltesen is here, and the chiefs of several clans as well as group leaders. I'll gather them for the evening meal. But now I want to see who lands with this ship."

The ship landed eighty warriors of the Reindeer Clan—all that clan had, for it was the smallest—then sculled out past the sandspit, powered by the strong arms of Sea Eagle clansmen. There its sail was hoisted into the offshore wind and it started north for the Glutton fishing port of Järvhamn.

Björn showed Nils the council circle, then trotted off to find the members of the war council while Nils gathered dry twigs and stood them carefully among the ashes and char of the fire site.

XIX

The long double file of neovikings was not very impressive as they rode down the dusty road. They numbered twenty-two hundred warriors and four hundred freeholders, filthy, shirtless, and riding nondescript work horses that Casimir's officers had commandeered from the farms of northwestern Poland. Now they were entering the northern Ukraine, moving with scouts ahead and out on both flanks. One of the lead scouts galloped back into sight and fell in beside Björn Ärrbuk and Nils.

"We have run into some knights," he reported laconically. "Our Pole thinks they're Magyars because he can't understand anything they say."

The few northmen besides Nils and Sten Långresare who knew appreciable Anglic had been assigned to scouting duty. And Casimir had early assigned several knights to the neoviking army to serve as their contacts with Poles—men who knew some Danish or had linguistic talent.

Nils and Björn dug their heels into their horse's sides and galloped heavily up the road. In less than two kilometers they caught up to the lead scouts, with their Pole and five Magyar knights. The Magyars were in bad shape, three of them bandaged and all five tired and demoralized. They were remnants of a strong Magyar force that

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had ambushed a large force of horse barbarians. Badly outnumbered to begin with, they had planned to strike and then ride for cover in the forest, leaving part of their number among the trees as archers to give them cover when they disengaged. This usually worked fairly well. But the horse barbarians had been bait, and when the Magyars had ridden out in attack their archers had been surprised from behind by a company of orcs, and the whole party had been caught between the two enemy forces.

"There were three hundred of us," their officer added, "and so far as I know we're all that's left." The man stopped talking for a minute, his haggard face working. "And I doubt we killed fifty in the fight."

"You're the first we've come to who've been fighting," Nils said, "and the first who've been able to tell us anything. How many have been lost of those who left Hungary?"

"I don't know. I only know our losses have been heavy. But we don't operate as one army. At the beginning we separated into ten squadrons of three or four hundred each, but we've had to regroup several times to bring the strength of the squadrons back up to that. Probably more than half of us lie dead between here and a hundred and fifty kilometers east, and Janos is one of them."

"What about the other armies—the Ukrainians and the Poles?"

"I've seen them different times but I never talked to any because I don't know Anglic. But those who do say that they've lost heavily too, especially the Ukrainians, who were in it from the beginning." The man stopped for a minute, looking like he might have cried had there been any tears in him. "We've probably lost more than the enemy, and we were a lot fewer to begin with.

"What's kept us going has been the things we've seen—the people. I'm glad I don't know their language; I don't think I'd want to hear the things they could tell. But I'll tell you this. If I could get out of it now and be safe I wouldn't do it. I want to die with my teeth in a throat."

At midday, when the column stopped to water and rest their horses, a grim Magyar was assigned to each scouting group. That night they camped in a forest, and stayed there the next day while scouts on their best horses searched the country ahead, where large prairies were interspersed with forests and woods. In the afternoon they returned to report a large encampment of horse barbarians.

Björn Ärrbuk gathered several groups, a total of three hundred warriors, and rode quietly out of camp in the gathering dusk. After a time they saw the enemy fires in

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the distance. Hooding their horses, they lay down to rest.

Gradually the fires burned down and most of the warriors slipped out into the prairie on foot, disappearing into the darkness. The men who stayed behind with the horses watched and listened intently. Once they heard a mounted patrol pass at some distance in the darkness, and then it was quiet again.

Suddenly there were distant brassy blasts from foreign war horns, and fires began to grow. They pulled the hoods from their own mounts and sprang onto their bare backs, ready, nervous to know what was happening. In a few moments they could hear the thunder of approaching hooves, the hooting of neoviking war horns, and then shouts in their own language. A herd of horses galloped past, driven by whooping northmen, and they rode in among them individually, changing mounts in the tumult.

When morning came to the neoviking camp the group leaders counted their men. All but twenty-one had returned, straggling in on fine horses and driving others, blood on their swords and grins on their faces. They could not say how many they'd killed, but they thought a hundred at least, and they'd scattered a large part of the horses that they had not been able to steal. Once mounted they had cut a spiral swath through the enemy camp before fleeing, and they all agreed it had been worth the long trip from the homeland.

Björn Ärrbuk sent out two of his Poles and two of the Magyars to hunt for others of their own forces and spread word of the victory. Meanwhile scouts were sent out again, much better mounted now if still bareback, to get a better understanding of the country and the location of enemy camps. Groups not chosen for the first raid were impatient for action.

Another large encampment of horse barbarians was reported about twenty kilometers away. A few kilometers from it was a dense woods of several score hectares, forming a small island in the prairie. Björn Ärrbuk called a council.

"Nils Järnhand tells me we may be able to surprise horse barbarians but never the camps of the orcs, because the orcs have mind readers like himself who could sense our coming. If we want to kill orcs, the best thing is to have them come to us at a place of our own choosing. If we surprise the barbarian camp in the dark and then take cover in the woods nearby, they can surround us. They can attack us there if they want, but their horses will only be a hindrance to them and we can butcher to our hearts' content. Nils thinks they will send for orcs though, to root us out on foot, and we can find out just what these orcs are made of.

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"There's a spring in the woods for water, and it's less than three kilometers from a large stretch of timber so that we can sneak out and escape by night when we want to.

"We'll be both bait and trap, and when we're done they will have learned to fear northmen."

They broke camp at sundown and rode by moonlight to the woods near the enemy camp without encountering a patrol, lying down to sleep until the moon set.

This time the raiders moved out on horseback, four hundred of them, silently until a patrol challenged them less than five hundred meters from the enemy camp. With loud whoops they charged, striking at anyone on foot as horse barbarians ran out of their tents. Through the camp and back again they rode, chopping and striking in the confusion and darkness, then broke up and rode away hard into the concealment of night. Their shouts and laughter as they struggled into their own camp might have kept everyone awake until dawn if the group leaders hadn't insisted that they quiet down and rest.

At daybreak several thousand horse barbarians were circling the woods and looking grimly into its thickets, while more arrived periodically from other camps. Several times impatient tribes charged their horses toward the woods, breaking off when swarms of arrows met them near the trees from freeholders stationed among the branches.

About midday a large army of mounted men wearing black mail came into sight in broad ordered columns, dismounting out of bow shot. Men in the treetops counted the width of the columns and the number of ranks, until they shouted down that there were about forty hundred. The orcs formed a line of battle several deep, opposite one side of the woods and then, shields raised, began to walk forward. At thirty meters a war horn blew from among the trees, triggering a flight of arrows, and the orcs began to double time toward the woods.

Once engaged, the warriors drew back, tightening their protective circle around the freeholders and the horse herd. The battle continued until midafternoon between the mailed and grimly silent orcs and the shouting grinning northmen, and as the hours passed the orcs became grimmer. Finally trumpets sounded and they began an orderly retreat. The northmen permitted them to disengage and followed them with twanging bows until they were out of range in the prairie.

For the rest of the day the neovikings moved among the trees taking scalps, equipping themselves with black mail shirts, and dragging orc bodies to the edge of the prairie, where they piled the muti-

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lated corpses for the enlightenment of the watching horse barbarians, shouting their counts back and forth and exchanging clouts of exuberance. The scalps numbered seven hundred and thirty-seven. Their own dead came to a hundred and ninety-six, and they dispatched sixty-five more who were too badly wounded to ride.

"So those are orcs." Björn Ärrbuk laughed. "You told me they're supposed to be the toughest we'll see. Surely that can't be true."

"The toughest on foot at any rate," Nils answered. "It's too bad they broke off when they did; they were getting tired faster than we were. And we may have trouble getting them to fight us again on ground of our own choosing. How many do you think got away and are too badly wounded to fight?"

"A few score at least," Björn turned to his runners. "Make sure that enough sentries are out and have the men eat and catch some sleep. I think we'd better get out of here tonight. When the moon sets we'll sneak across to the big body of timber where we can move around again."

The next day the northmen camped in the forest. Their nighttime crossing hadn't gone undetected for long, but they had maintained stealth even among the questing squadrons of horse barbarians, moving through the blackness in small groups or singly, breaking into a gallop, and fighting only when they had to. Many abandoned their horses for diversion. They scattered everywhere, reassembling in the forest with the directional sense of the wilderness-bred. At daybreak they counted ninety-seven missing and were in a vile mood.

The day was spent napping and filing the nicks out of their swords, while small mounted patrols went out to explore the forest. One patrol found a band of fewer than thirty Poles and Ukrainians, all that were left of a mixed force of three hundred who had fought a pitched battle with a large force of orcs two days earlier. Another patrol watched an attack on horse barbarians by a large number of Magyar knights, who seemed to have abandoned their small unit tactics for hit-and-run attacks by larger forces. The battle was brief and bloody, and about eight hundred effectives reached the cover of the trees where, after brief fighting, the horse barbarians had broken off the engagement.

Men of the patrol led Nils to the Magyars. They had reassembled deep in the forest and were camped by a brook, sharpening their weapons and nursing their wounds. Nils recognized their commander and the burly psi who squatted beside him, eating their horsemeat in the shade of a linden.

"Lord Miklos!" Nils called. "Zoltan!"

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The tall knight got up slowly. "Nils. So we do meet again." He spoke and thought like a man half asleep. "I heard that the northmen had come, and that they'd night-raided the very camps of the enemy. Butchering him and running off his horses. You can't be as good as we've heard, but we enjoyed the stories." His voice dropped. "Did you know that Janos is dead? In our first battle. You were right, he was no coward. If his weapons skill had matched his boldness . . ." Miklos lost his train of thought and looked around him vaguely. "I'm all used up friend; I didn't realize how old I'd become. But I won't need to last much longer. So far as I know the eight hundred of us here are all that is left of the thirty-eight hundred that crossed Uzhok Pass. There may be a few score more, perhaps stragglers or joined up with Poles or Ukrainians, but we are most of what's left. We've done our best, but we've been outnumbered time and again, and our spirits are dying with our friends. We have no hope. Hate keeps us going but the real fire is dead."

"If you'd been with us yesterday it might have been relit," Nils said quietly. "We got forty hundred orcs to attack us in heavy timber, and when they pulled out they left more than seventeen hundred dead. We took scalps enough to make a large tent, and our own losses were two hundred sixty."

"How many of you are there?" Miklos asked.

"We started with twenty-two hundred warriors and have lost about four hundred, while seventy more have wounds bad enough to impair their fighting. We killed those who were badly wounded. We couldn't take them with us and wouldn't leave them for the enemy to work over."

"We've come to do the same, since we've seen what they do to their prisoners. Once I wouldn't have believed it. And what will you do next?"

"We're exploring, patrolling, so we can decide what's to our advantage. We always look for an advantage. Come with me and meet our war leader, Björn Ärrbuk. You can plan with us."

"How old are you, big friend?"

"This is my twentieth summer."

The old knight shook his head. "Tomorrow. Tomorrow I will go and meet your chief, if I can. If nothing happens. But today I will rest."

By evening another patrol reported two small forces of Poles and Ukrainians in the forest, totaling two hundred and eighty effectives. The various reports also gave a picture of the tactical situation. This forest, too, was almost an island in the prairie, but a big one, about fifteen kilometers long and mostly four to six wide. It connected with more extensive forests

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to the west by a neck of timber about a kilometer wide. Strong forces of horse barbarians patrolled the prairie on both sides, and an army of orcs were digging a ditch and piling a barricade of felled trees across the neck.

Björn Ärrbuk called his officers together. "Have the men break camp. We're going to move out right now so we can travel while the moon is still up. We'll camp about a kilometer from the orc line. Nils, go to your friend, the Magyar chief, and to the others, the Poles and Ukrainians. Tell them we're surrounded and we're going to break out at sunup. Tell them we want their help but we won't wait for it. If they won't come now, we'll leave them to cook in their own grease. Meet us at our new camp." The war leader grinned and punched Nils's shoulder. "Tell them we're going to kill lots of orcs tomorrow, and they can watch."

The Slavic and Magyar cavalry, along with neoviking freeholders and wounded, were in flanking positions when dawn came, ready with bows to repel any horse barbarians who might try to enter the woods and intervene. Orc psis had picked up the approach of the warriors in the growing light, and they were ready.

Initially the northmen, attacking up the ditch bank and across the barricade, took heavy losses. But they broke the orc line in places and soon pushed it back. Some of the orcs clearly were afraid of the northmen, but their ranks were deep and their officers ruthlessly permitted no withdrawal. The battle continued without slowing until midmorning, when the orcs began to show signs of exhaustion and their casualties began to rise rapidly. Then, without warning, hundreds of fresh orcs counterattacked, charging relentlessly for half an hour. Suddenly orc trumpets sounded and their survivors turned and ran.

The northmen didn't chase them. Instead they unlaced the mail shirts that they weren't yet accustomed to, and sprawled in the shade or wandered limply around, foul with sweat, hands cramped, their hoots and crowing almost giddy with fatigue. Gradually their group leaders got them organized again and they began the scalping, while some of the knights came wide-eyed to watch. As the number of scalps grew, the barbarian vitality began to reassert itself, with counts shouted back and forth from squad to squad. More knights came on horseback, to drop loops around the necks of scalped orcs, dragging the bodies into big piles where they could be admired better. And soon every northman had a mail shirt that fitted.

The final count almost equaled that of the earlier battle—fifteen hundred and sixty-eight. But the

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northmen killed by the orcs or dispatched by their comrades numbered four hundred and eighty-nine, chief among them being Björn Ärrbuk. After the tally the war council met to choose a new war leader, and a group leader of the Götar arose.

"In both battles my group has fought next to a group of the Norskar, whose leader is called Leif Trollsvärd. I was too busy to be watching others much, and anywhere I looked I saw great sword work. But I can tell you why they named him Trollsvärd; his blade truly seemed enchanted. If we had an army of Trollsvärds there'd be no orcs left. That's why I say we should make him our new war leader."

Leif Trollsvärd got up, bloody and filthy, looking around the council, and his words were not as fast as usual. "I have always known I was good," he said. "I could see it myself and I've always been praised for it. But until this week I never realized how good I had to be to stand out among the rest—not until I saw how much better they were than these orc swine, who are supposed to be the best of any other army.

"But also, I've always known that there are others around me whose minds are more clever than mine. I have never led a major raid, for there have always been others who could see possibilities better and plan more cleverly. They are better fitted than I to be war chief.

"Look around. Who is the most knowing among us? Who was it Björn Ärrbuk questioned about the enemy before deciding his moves?

"The Danish poem-smith said The Yngling would appear among us, and I think he was right. And there are others who believe the same. I say we should make Nils Järnhand war chief."

That night the living northmen slept almost as soundly as their dead. But before their new war leader slept he went to visit the Magyars and Slavs. He sensed the turgidity of feeling among them. They had seen great killing of a hated enemy that day, and their emotions were stretched with a desire to do the same.

In the morning several thousand horse barbarians approached to within a kilometer of the timber's edge. Without council or command a group of Magyar knights galloped out toward them, and within moments the whole force of Magyar and Slavic cavalry poured after, spontaneously, helter skelter, forming a loose line of attack as they charged. The horse barbarians formed to meet them, shouting war cries, but the knights penetrated them deeply, fighting like berserkers.

The northmen mounted and

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watched from the timber's edge. They had neither lances nor saddles, nor were they the horsemen the others were, so Nils commanded them to stand unless he signaled.

The battle broke into clusters of knights and horse barbarians wheeling and chopping, the savagery of the knights submerging groups of the enemy time and and again, until a large number of horse barbarians disengaged, regrouped, and charged. That wave broke, but it took good men with it, and the surviving knights at last gave way, riding for the timber while a rearguard stood for brief moments. Then the horse barbarians raced eagerly after them.

Looking around him, Nils raised his war horn, ready to distract the enemy long enough to let the knights reach cover. But in that moment a new force appeared out of the timber's edge nearby, Polish and Prussian cavalry under the banner of Casimir. Without warning they launched themselves at the horse barbarians, who were strung out loosely in pursuit, and swept them away. Their horses were fresher, and they rode after the fleeing barbarians with a blood lust that had never been properly satisfied before.

For the rest of the morning, while the northmen helped themselves to saddles and lances and refilled their quivers with arrows of Asian pattern, the allied cavalry enjoyed the grim satisfaction of counting enemy dead and killing enemy wounded. The count was twenty-one hundred. Perhaps, Trollsvärd remarked to Nils, the horse barbarians could afford twenty-one hundred more easily than the allies could afford the six hundred and eighty knights that they had lost. Lord Miklos had said he would not last much longer, and he had been right. The tough old man was found with a broken sword by his hand and a split helmet.

But the knights were grimly happy; for the first time in a major battle they had substantially outkilled the enemy. And they were ready to try again.

That afternoon, camped deep in a forest and with patrols out, the allied commanders met in council.

Of the nearly forty-five hundred Polish and Prussian knights that had ridden east with Casimir, about two thousand effectives remained. Of the Magyars and Slavs who had launched the battle that morning however, fewer than four hundred were still able to fight. The neovikings numbered thirteen hundred warriors fit for combat and nearly four hundred freeholders. Not counting the freeholders, the allied armies totaled less than thirty-seven hundred.

They estimated that Kazi's army, on the other hand, still must

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number twelve to fourteen thousand horse barbarians and more than six thousand orcs.

Zoltan Kossuth and Jan Reszke had been in contact with members of the Inner Circle and reported on other armies. The Danes and Frisians together had already started out with seventeen hundred knights, while an army of Austrians and Bavarians believed to number more than two thousand had either left or was about to leave. The lords of Provence, on the other hand, were still fighting each other. Casimir remarked wryly that they would be doing that until doomsday, which might be nearer than they appreciated. The French king had refused to commit himself until his exasperated nobles finally killed him. The new king was gathering his forces now, numbering perhaps as many as five thousand.

When they had finished their report Casimir got up and looked around. He had lost a lot of weight and a lot of men. "Who wants to bet that Kazi's army won't cross the French border before the French do?" he said. "The fact is that those western cretins, the whole obscene bunch, sat around sucking their thumbs while we did the fighting. So we're on our own while they squawk and flap their arms, what there are left of us, and I guess we know what that means."

Nils stood and answered the Polish king quietly. "We all know we can't beat Kazi's army, but we can damage it some more and buy time for others. We . . ."

"Oh hog swill!" Casimir snapped. "Others! Let the others take care of themselves for a change. I've had . . ." The force of Nils's gaze drew the king's eyes and distracted him, so that his words trailed off into grumbling and he sat down slowly without finishing.

"You knew from the start that Kazi's strength was much greater than ours," Nils pointed out. "But you chose to fight, because the only other thing to do was worse. It still is. Now we can hurt Kazi most by killing more orcs. Without a strong army of orcs he'll lose his power over the chiefs of the horse tribes. But we can't get anything done by sitting here in the woods waiting to be attacked or letting him ride past us into the west. Tomorrow we need to send out a number of small patrols, to learn where the enemy is camped and what he is doing."

"Then what?" Casimir asked.

"We'll know when they come back."

By the following evening the patrols were returning. Several had found newly abandoned enemy campsites, while two reported a huge camp. Bunches of cattle were being driven there, and the fumes of many fires suggested that meat was being smoked.

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"It sounds to me," Casimir said, "as if Kazi has gathered his whole army together to pass us by and move west. Apparently we're too few to trouble with any longer." He looked at Nils. "What do we do now, northman?"

A sentry hurried into the circle of firelight. "M'lords," he broke in. "A patrol has brought a prisoner."

"When did we start taking prisoners?" Casimir growled.

"Not an enemy prisoner, Your Highness. It's a foreigner. There are a lot of them, sir, men, women, and children, and this patrol ran into some of their scouts. The one they brought in speaks Anglic, and offered to go with the patrol so that we wouldn't attack his people."

"Attack his people? We've got too many enemies already. What kind of people are they?"

"The one the patrol brought in says they're Finns, Your Highness, whatever Finns are, and that the whole race of them left their homeplace in the north."

"Bring him here," Nils ordered. "I know a little about Finns. Maybe there'll be some help for us here."

The man was Kuusta Suomalainen; Nils sensed his identity and also his psi before he could see him.

The Finns totaled nine thousand, including nearly two thousand fighting men, but none were knights, or warriors in the neoviking sense. They were roughly equivalent to the neoviking freeholders—independent, vigorous, and tough, but with modest weapons skills except for excellent marksmanship. With a few others, Kuusta had been scouting a day ahead of the main body of migrants and saw the end of the battle between the knights and the horse barbarians. They had returned to their people then, and their headmen had elected to continue into the war zone, taking their chances on getting through safely.

"There is no safety," Nils told him. "Not anywhere in Europe while Kazi is alive. He has nearly twenty thousand men while we have about four thousand. Sit and listen a while, old friend. Maybe before the council is over we'll ask for your help."

The others deferring to him, Nils questioned the patrol leaders carefully. The Kazi camp was near the west bank of a river, in a long stretch of prairie some four to six kilometers wide that extended from great marshes on the north southward along the river for tens of kilometers. On the east side of the river, and protected by it from prairie fires, stood a forest.

Local knights knew the place. The river, although sixty or eighty meters wide, could be easily crossed at this season, when water levels were low and currents weak. But the steep banks were troublesome.

When no one had any more in-

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formation, Nils outlined his plan. "I'd like to go over the ground myself," he said when he had finished. "There are more unknowns in this than any raid leader likes. But we don't know how long they'll stay there, and if we miss this chance we're not likely to get another with as much promise. Tomorrow we'll rest and tomorrow night we'll ride." He turned to Casimir. "And don't feel left out, good friend. You'll have chances to fight, and the firesetters will be yours. But this action takes stealth and foot soldiers, so it has to be ours."

The next day Kuusta Suomalainen arrived with four hundred volunteers, brown-faced and sinewy, their quivers stuffed with arrows. The rest of the Finns were moving on southward, and would wait two days travel farther for the survivors.

The waxing moon gave good light until nearly dawn. Crouching quietly in the forest, some distance back from the river bank, the northmen tested the air for a breeze. Too many things could go wrong. At least there did not seem to be an east wind, although down among the trees a light breeze would be hard to detect. But they could smell the enemy horses across the river to the west. And while the clear night had lowered the temperature almost enough for frost, the air seemed so dry that even in the open there was likely to be little dew.

Nils lay in the brush at the top of the river bank, two meters above the water. Psi sentries would not detect his single quiet mind. In the dim light of dawn he could see thousands of horses in a great paddock that lay between the far bank and the enemy tents.

Finally the sun rose, brightening the kilometers of tawny grass beyond the enemy camp. Orcs and barbarians began to stir among the horses. A breeze came up, a good west breeze, and Nils could smell the horses strongly.

Back in the forest men lay with the patience of those who hunt for a living.

Foreign thoughts mumbled faintly at the fringes of his awareness, a psionic background to the morning. As the sun slowly climbed, the breeze became brisk, and then he saw several lines of smoke across the prairie. They grew as he watched, coalescing.

He wiggled backward through the brush, got up, and slipped back to the waiting northmen. The order passed down the line in both directions, in soft Scandinavian and by gestures to the Finns. Quietly then they moved toward the river, the freeholders and Finns selecting suitable trees along the bank.

Through the screen of vegetation they could see and hear some of the growing excitement in the en-

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emy camp. Trumpets blew and men hurried about. The smoke of the distant prairie fire had grown to a tall curtain. Northmen and Finns reached back over their shoulders to make sure that their arrows were within ready reach and came easily out of the quiver. Barbarians and orcs began to trot into the horse park carrying saddles and gear, while others caught and soothed nervous horses. The freeholders and Finns started up their chosen trees, keeping behind the trunks so far as possible. Within a few moments a unit of orcs had mounted and were moving down the bank into the water. When they were halfway across a war horn blew.

For half an hour arrows hissed into the ranks of soldiers. At first there were both orcs and horse barbarians in roughly similar numbers. Some made it across, piecemeal, to die fighting at the top of a bank that grew slippery with splashings of water and blood. After a bit the horse barbarians stopped coming and could be seen riding along the river in both directions, trying to outflank the long wall of flame racing toward them. But the disciplined mail-clad orcs kept coming. Many took arrows and disappeared. Some drowned in the deeper water when their horses were killed under them. Many scrambled out afoot, slipping and swearing, to face the deadly blades above them, or spurred dripping falling horses up the bank. One by one they established bridgeheads and fought to expand them. Freeholders and Finns began to jump from the trees, quivers empty, running back through the forest to the place where the horses were tied. A war horn signaled that the enemy was crossing in force below the south flank of the neoviking line, and the warriors, too, began to run for their horses, shouting and crowing.

They galloped away almost unmolested, then slowed, jogging their horses through the forest until they approached the marsh. Scouts sent down to the river reported large numbers of horse barbarians on the opposite side who had outflanked the fire, perhaps by swimming their horses down the river. Nils had his men abandon their horses and they moved into the marsh, hidden in the wilderness of tall reeds and cattails and safe from any cavalry attack.

Not far downstream they found a ford, crossed the sluggish current and started westward. They moved concealed well within the marsh's edge; if they were detected there'd be no chance of reaching the remounts they'd left the night before.

"What do we do if someone's found the horses?" asked a blood-spattered warrior.

Nils grinned at him. "You're spoiled by all the riding we've done in this country. Imagine

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you're back in Svea and be ready to walk. We'll know in a few kilometers."

After a bit a scout came through the reeds to him. "Nils," he said in an undertone. "We can see the woods where we left the horses. It's crawling with orcs and horse barbarians."

Nils turned to his runners. "Hold the men up. I'm going to see what possibility there is of drawing them into a fight. I don't think they're foolish enough to attack us in the marsh, but we don't want to miss any chances."

He moved to the marsh's edge and lay on his belly in the muck, looking through a screen of reeds across the narrow band of prairie separating him from the woods. There were hundreds of mounted men in the vicinity; it would be suicide to try to reach the horses. Then he recognized a banner, and his eyes narrowed. The orcs were the elite guard.

Nils called out strong and clear in thought. "KAZI! (He projected an image of himself, sword bloody, his foot on a dead orc.) HOW MANY MEN DID YOU LOSE TODAY? THREE THOUSAND? FOUR? I DOUBT WE LOST MORE THAN A HUNDRED!"

There was a commotion among the orcs as several psi officers caught the taunt, and a huge figure in glistening black mail rode out from the trees on a magnificent horse. Although Nils lay concealed, the face looked exactly at him.

"So, northman, it's you." The thought entered Nils's mind cold and quiet. "Have you come to die?"

"Not me. We're enjoying ourselves too much." He had not expected Kazi's utter calm, and it alerted him for some deadly surprise. "You like to watch butchery, Kazi. Why don't you send your orcs into the marsh?"

The great cold mind fixed on his without discernible thought or emotion, only deadly presence. Nils waited, alert.

"Will you fight me, northman?"

Nils could detect no tinge of treachery in the challenge. "What assurance can you give that your men won't attack me if I come out?"

"I'll come most of the way to the marsh's edge," Kazi answered. "We'll be closer to your men than mine."

Again their minds locked for a moment, like eyes, and Nils read nothing there but grimness. He turned to his scouts. "The black giant is Kazi, the one called Baalzebub. We've spoken through the mind and agreed to fight, the two of us. If any of his people ride out toward us, blow a war horn and cover me, so I'll have a chance to run for it."

Then he turned to look out through the reeds again. Kazi was speaking to the officers with him,

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in what seemed to be Arabic. Some of them rode in among the troops, but still Nils sensed no treachery.

After a moment Kazi dismounted and walked toward the marsh, slowly, his iron mind locked shut. When he had covered somewhat more than half the distance, he paused, and Nils came out of the reeds. They walked toward one another. To the scouts peering out, Kazi looked immense, emitting an aura of impregnability. When only a few meters separated them they raised swords and shields, and then they met.

Kazi's first stroke would have severed a pine ten centimeters thick, but it was easily dodged so that his sword nearly struck the ground and he barely caught Nils's counter on his shield. Shock flashed through Nils's mind: the man knew little of sword work. Kazi's second stroke followed too quickly after a feint, so that it lacked force and left him extended. Nils's shield took it easily and he struck Kazi's thigh, cleaving flesh and bone, struck the black shield aside as Kazi fell, and sent his sword point through mail and abdomen, feeling it grate on the spine. A third quick stroke severed the head, and Nils turned and sprinted for the marsh. But no orc rode out and no arrow followed him.

XX

The northmen and Finns slogged westward through the marsh until, in early afternoon, the prairie beside it ended in forest. They turned south among the trees, rested a while, and went on. When night fell they were still walking, following game trails by instinct and moonlight. At length Nils sensed thoughts that indicated Polish conversation. Leaving his men, he approached until he could hear quiet voices, and called out in Anglic. "Ahoy. We're the northmen, back from the ambush. Where is Casimir?"

A knight moved through the shadowed moonlight, peered closely at Nils and recognized him. "The army is scattered and Casimir is with us. I'll take you to him."

Casimir squatted, grim and tired, describing the day to Nils. "You were right when you said we'd have our fight. Horse barbarians came about midday, the biggest horde of them I've seen, and riding hard. We jumped them, and the fighting was heavy for about a quarter of an hour, but we were getting too badly scattered so I had retreat blown, and we fought our way back into the timber the best we could. They chased us well back into the woods before trumpets pulled them out, and they rode west down the road through the forest."

"Did you see any more later?" Nils asked.

"Three smaller forces, all horse barbarians. But not an orc all day."

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"You probably won't. Kazi is dead and the orcs took heavy losses at the river. We must have halved them. Without Kazi I expect they'll turn back; he was the very source of their being and they're going to be lost without him."

Fatigue fell from Casimir as he got to his feet. "Dead? Kazi dead! Why, that changes everything! From what you've said, without Kazi the horse barbarians will split up into raiding tribes, feuding with each other, and probably scatter all over Europe. Given time we can clean them out."

"Yes," Nils said, grinning in the moonlight. "And you can bet the western kings will get their share of fighting now."

The next day the allied forces regathered. The knights counted bodies while the northmen and Finns rounded up the horses of the dead, replenished their stock of arrows, and smoked racks of horsemeat over fires. A head count showed nineteen hundred allied cavalry able to ride but fewer than four hundred dead or badly wounded, so that about a hundred still seemed to be scattered out of contact in the forest. One of the dead was the gangling Jan Reszke. The bodies of nearly six hundred horse barbarians were tallied.

The northmen had lost seventy-eight and the Finns nine.

It was dusk. Zoltan Kossuth and Kuusta Suomalainen squatted on the ground with Nils, a psi tuner beside them on a fallen tree. Nils had been giving Raadgiver a resumé of the fighting, ending with Kazi's death. "There'll be some ugly fighting yet though, and the western kings hadn't better rely on the Poles to do it for them. They're wise and tough, and confident now, but there aren't a whole lot of them left. What you need to do is hold the western armies together, especially the French, until they have a chance to see these horse barbarians in action. Then they'll keep themselves mobilized."

"And what about you northmen?" Raadgiver asked.

"We're going back to northern Poland until our people have finished landing. They have only freeholders there to protect them. I expect we'll see more fighting yet. Then we'll go to Kazi's land. I don't think the orcs will try to defend it against us; not when they can go somewhere else where the people are afraid of them."

"Have you thought of becoming king over the tribes?" Raadgiver asked. "You'd be a great one, and after what you've done they'd surely accept you."

"King? They'd never take a king. To them, a war chief is a war chief. And anyway, when they leave for Kazi's land they'll go without me, and with a different war leader. They'll have no trouble finding the place—they've seen

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a map—and they can take it as well without me as with me.

"I'll follow them later, with a little luck, and I expect I'll be a chief someday. At any rate they'll listen to me. But a king? I know your mind, old friend. You're wise and hardheaded, but you overrate the importance of genius. You picture me as a great ruler, leading my people toward the glories of the olden times. But that will take many lifetimes, unless men do indeed come back from the stars. They'll change, all right. The years will change them, and new country. They're already changing. But what kind of people will they need to be two hundred years from now, or one hundred? I expect they'll need to be tough and self-reliant, but they're both of those now.

"I was their Yngling this time. And someday, in their need, they'll produce another Yngling, though he, of course, may not be young.

Briefly, Raadgiver's mind was quiet. "Where will you go before you follow your people then?" he asked.

"I know the woman I want to live with and have children by, one of the kinfolk, named Ilse. I'm going to hunt for her."

Kuusta interrupted. "Are you going alone, Nils? The country'll be dangerous with horse barbarians. I really want to stay with my people, but if I thought you'd be traveling alone I'd offer to go with you."

"I don't expect to go alone," Nils replied grinning. "I think that when I mention it around, maybe two or three others will want to come along."

The next morning the northmen started west with their new horse herd. ■

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PLACE	TITLE	AUTHOR	POINTS
1.	The Teacher	*Colin Kapp*	2.61
2.	Pressure	*Harry Harrison*	3.00
3.	The Timesweepers	*Keith Laumer*	3.05
4.	All Fall Down	*John T. Phillifent*	3.06
5.	Androtomy and the Scion	*Jack Wodhams*	3.23
6.	Womb to Tomb	*John Wesley*	4.25

THE EDITOR

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P. Schuyler Miller

FOUR-LETTER SCIENCE FICTION

Long ago, when science fiction was very young, it seemed to be full of four-letter words. Words like "star," and "atom," and "time" that you wouldn't find in a family magazine. (I had to learn what "nova" meant from an older kid, down on the river bank after school.)

A little later the covers of most science fiction magazines showed voluptuous young ladies, stripped down to their underwear (or part of it), in the clutches of robots and bug-eyed monsters whose intentions were pretty clear. Those covers drove parents and teachers into horrified hysteria. If they'd bothered to look inside the magazine, they'd have found that nothing worse than mayhem ever happened.

In case you hadn't noticed, things are different now. The bug-eyed monsters do score, over and over and over, and everyone uses common, everyday four-letter words—the kind you used to see in the school "basement," not the science fiction kind. Likewise over and over. In some cases, *ad nauseam* —and that is meant literally.

Let me say, fast and emphatically, that I do not class every SF story that involves sex or obscene language as pornographic. Robert Heinlein pointed out long ago that science fiction is or should be essentially a branch of realistic fiction, and sex and the words describing it are and always will be a part of real life. Judith Merril wrote one or two excellent novels in which what was then considered "normal" sex relations were a natural and necessary part of the relationships between the characters. Ted White has done it recently in

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a number of paperbacks. Philip José Farmer created a stir with a series of novelettes about what could be called abnormal sex—the sexual life of alien creatures and, in "The Lovers," so-called miscegenation between men and aliens. Others—Theodore Sturgeon, C. S. Lewis, Samuel Delaney—have written similar stories with sex and "bad" language handled as an essential part of the story. These have all been good stories and good science fiction.

There is also pornographic science fiction, and the line between the acceptable and the pornographic is a blurred one. I am wholeheartedly with the Supreme Court in arguing that intent should be considered. If the author intends to write a dirty story, it is a dirty story.

Now let's look at some of the current crop.

There are a number of SF paperbacks of the "Raped by a Robot" type, which I've seen but haven't read. I intended to, but by the time I could get at them the steady customers had cleaned the store out. I did get one, Leo August's "Superdoll" (Award Books No. A427X; 152 pp.; 60¢), which is rather like those old BEM covers: it promises more than it delivers. Actually, the book is a somewhat tongue-in-cheek parody of the current school of spy movies in the "Matt Helm" and "Flint" genre, cross-bred with SF. The "superdoll" of the title is S.H.E.I.L.A. (Simulated-Human, Electronically Implemented Lady Agent), a gorgeous robot with all kinds of built-in lethal hardware, sent to seduce and/or clobber the baddies. Funny—and meant to be—but not worth much of anyone's time.

Then there's Norman Spinrad's "Bug Jack Barron" (Avon Books No. N-206; 327 pp.; 95¢—also published in a hardback edition by Walker & Co. for $5.95; I haven't seen that version). This was a sensation in England, when it was published in "New Worlds," presumably for the hero's liberal use of all the latrine words and his vigorous rutting. But Spinrad is writing about a near future whose adults are the present young swingers who do use these words lavishly and are as promiscuous as rabbits—or so they say. This is the kind of future the activists are promising . . . so here it is. The story outline, on the other hand, is pretty old hat. Jack Barron has a TV talk show in which he digs up dirt and makes people uncomfortable. He takes on Benedict Howards, the billionaire owner of the Foundation for Human Immortality, which freezes people for $50,000 cash in the hope that they may one day be thawed out and made immortal. Various of his associates from his radical college days are also trying to use him. Needling Howards develops into war when it turns out that How-

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ards can confer real immortality by a process straight out of a Frankenstein movie, by transplanting the glands of tortured and murdered children—perferably black children. So Jack Barron is royally bugged: shall he be immortal? Shall he be President? Shall he be true to his one-time humanistic standards? The sex and the language belong to his character and his era. They stop the action in its tracks at time, but that's Jack Barron for you. You may find him tiresome rather than scandalous.

Philip José Farmer, on the other hand, is back with a pair of semi-SF books which he and the publisher intend to be pornography and are consequently pricing at appropriate prices: $1.95 each. From where I sit, they are pure juvenile exhibitionism. In his "Flesh", first a paperback, then a hardback, now back again as a Signet paperback (No. T3861; 75¢), Farmer was projecting some of the fertility rites of ancient times into our future, mixing in some molecular biology, and writing a bawdy but good yarn. In one of the new books he has a theme vaguely related to his alien sex stories of twenty-odd years ago, which he mixes with a limping private-eye plot and stops at regular intervals for a slobber of exotic sex. This one is called "The Image of the Beast" (Essex House, North Hollywood, Cal.; No. 0108; 255 pp.). For your $1.95 you get the kind of paper and binding that go with class paperbacks—this is *permanent* pornography, evidently—and comments by Theodore Sturgeon, who seems to wish he were defending a better story.

In "Image," which may be one of a series if the faithful buy it, private eye Herald Childe sets out to find out what manner of monsters killed his slob of a partner by, among other things, biting off his penis in a moment of good fun. Said monsters turn out to be strays from that good old stereotype of SF, the parallel universe. Vampires, werewolves, and one wench that the original Bluebeard knew. But it's a bad book, and the sex and sadism don't help it.

"A Feast Unknown," on the other hand, is quite good in its own perverted way. It's No. 0121 from Essex—286 pages—same good typography—and it will drive the Burroughs Bibliophiles up the wall. For this is a sexed up pastiche in which the "real" Tarzan (Burroughs changed names, places, et cetera, to protect the innocent and the puritan proprieties) feuds with the "real" Doc Savage, assorted baddies, and a powerful clique of bestowers of immortality, the ageless Nine. Lord Grandrith (whose ancestral castle is near the village of Greystoke) and Doc Caliban have had a puritanical upbringing, and they are acutely embarrassed by the sexual adventures that come their way—the more so since they have both become impotent except

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when they are trying to kill someone. Farmer debunks both series of stories very logically and plausibly and his four-letter words and multi-lettered sex intrude less. (For good measure, he has made Tarzan and the Bronze Man half brothers and sons of Jack the Ripper—courtesy, doubtless, of Robert Bloch, who may be parodied in "Image of the Beast.") "Feast Unknown" is pornography only because Farmer intends it to be and because that is what Essex is selling. It could have been a lovely straight parody.

But, until people grow bored with it as they seem already to be bored with open sexual calisthenics on the stage, there'll be more exotic sex and more four-letter vocabulary in much of our science fiction . . . in books, at least. If it's well done and belongs to the plot and the situation, no harm done. If it's dragged in for shock appeal, you can forget it. It won't last.

LET THE FIRE FALL

By Kate Wilhelm • Doubleday & Co., Garden City, N.Y. • 1969 • 228 pp. • $4.95

This, for my money, is the best novel Kate Wilhelm has done yet (I admit to having missed some of her paperbacks). It has an intricate plot that keeps you reading—something I am square enough to enjoy in a book—and it creates at least one character as real as he is bizarre in the cynical evangelist, Obie Cox.

The tangle begins when a starship crewed by dying humanoids crash-lands in Kentucky, just across the river from Cincinnati. Immediately the military, the authorities, the hucksters, the tourists all converge on it. One woman escapes and has a child in the home of a local doctor, at the same time that the illegitimate brat of a local teenager is born. It will certainly be obvious that the author is setting up a Shakespearean situation; the boy Obie Cox thinks is his bastard is the star child, and the youngster brought up in a cage is the son of a poor white nobody. At any rate, Cox sees his opportunity and launches himself as an evangelist, demanding the destruction of the aliens and everything connected with them. He kidnaps his "son," educates him in strange ways, and when the boy escapes, hunts him down. But by this time the country is in the midst of a religious war.

Reminiscent of Heinlein's "Stranger in a Strange Land"? Maybe—but Kate Wilhelm handles the story in a totally different, and more believable, way.

THE ZERO STONE

By Andre Norton • Ace Books, N.Y. • No. 95960 • 221 pp. • 60¢

UNCHARTED STARS

By Andre Norton • Viking Press, New York • 1969 • 253 pp. • $4.95

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These two books launch Andre Norton's newest sequence of adventure yarns about strange beings and phenomena and ancient lost races in the far reaches of the Galaxy. It isn't her best—the "Janus" books still have me on the ropes, and I like those older stories about the Time Traders—but it proves that space doesn't have to be boring. Luckily the first book, "The Zero Stone," and the hardback of the second are out together.

In "The Zero Stone," Murdoc Jern, foster son of a gem trader and fence, is trying to escape both the Galactic Patrol and the Thieves Guild, who want a strange stone his father bequeathed him. When the ship's cat eats another strange stone picked up in space, and gives birth to a strange catlike animal with powerful telepathic powers, the story is just getting under weigh. Eet, the space creature, and Murdoc are drawn to an abandoned planet where more of the stones turn up and we get a few clues to their nature as man and creature hide from the Patrol, the Guild and the local predators.

"Uncharted Stars" takes up Murdoc's search for the source of the stones. Hunting for clues among other gem buyers, and on into the barricaded base world of the Thieves' Guild, he finally gets his hands on a map made by the same dead civilization with which the Zero Stone originated. With the help of a humanoid of another ancient race he continues to peel away layer after layer of the mystery—only to have Eet undergo another startling transformation and unfold still deeper mysteries at the book's end.

THE LION OF COMARRE and AGAINST THE FALL OF NIGHT

By Arthur C. Clarke • Harcourt, Brace & World, New York • 214 pp. $4.75

I can't quite pass this book off with a "reprint" listing, because I don't think "The Lion of Comarre" has been in any collection of Clarke's stories before. "Against the Fall of Night" is, of course, the first version of his grand, poetic novel about Earth's last city, which was later revised and enlarged into "The City and the Stars." Many Clarke fans like this best.

"The Lion of Comarre" comes from a 1949 *Thrilling Wonder Stories*. It describes the adventures of a very young man of the very far future who sets out to find and explore the ultimate, automated city of Comarre, which a great ancestor has supposedly made the perfect home of Man. He finds Comarre, with the help of a friendly lion not at all out of "Tarzan," and discovers that dry rot is devouring the perfection. The story is only a novelette, but as a bonus you have Clarke's account of the origins of both stories.

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SPACEPAW

By Gordon Dickson • Berkley Books, N.Y. • No. S-1715 • 222 pp. • 75¢

This book was published in a hardback edition for young people, earlier this year, by Putnam's, for $3.75. I wasn't able to get their edition until the paperback came out. It's a lively, unpretentious action yarn that makes better reading than his recent "None But Man," which handles essentially the same theme in a totally different way.

That theme is the attempt of mankind to find a *modus vivandi* with an alien race. The folk of Dilbia are physically rather like the ogres of medieval myth—gorilla-like (though not so much so as the paperback cover would lead you to believe; the crude jacket of the Putnam book portrays them more realistically), with a wild set of traditions and a social order that is a mixture of the European Dark Ages and our own frontier. There is a roistering village society and an outlaw band, living back in the hills behind a strong log wall.

Bill Waltham—*not* the tragic, bearded Southern gentleman of the paperback cover, but a newly trained, freshly indoctrinated agricultural expert sent to persuade the Dilbians to plow—lands on Dilbia, finds his boss gone and a female assistant off in the bandit keep, and is promptly taken under the wing of the Hill Bluffer, a native guide and mentor with a knack for getting Bill in trouble. Nothing he can do has any effect but to get him in deeper. He finds a rival alien firmly established in the outlaw camp. He finds that the girl is a militant females' rights activist. And he is soon tricked into challenging the bandit leader to a slugfest.

You'll enjoy it.

FOR THE FLAG

By Jules Verne • Ace Books, N.Y. • No. 24800 • 190 pp. • 60¢

Ace, you may remember, is starting to bring out paperback editions of the English "Fitzroy" series of Verne translations. Being eminently sensible, they are starting with the lesser known titles. This book, though, has the distinction of having been the source of an excellent Czech movie, five or six years ago. It had very limited release, and I can't remember its name, but science-fiction convention committees should look for it. The sets imitated Nineteenth Century woodcuts and even the live characters were made up and dressed to look as if they had dropped out of an issue of *Harper's Weekly*.

Until I read the Fitzroy hardback of this book, I hadn't realized that Verne ever used submarines outside "Twenty Thousand Leagues Under the Sea" and "Mysterious Island." "For the Flag" has those and just about everything else: aircraft, rockets, a scientist with his den in-

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side a volcanic crater, a super-explosive—which is *not* atomic energy, gossip to the contrary—and lots and lots of good Victorian melodrama. The Czech movie is better than the book, though—delicious ham, done to a turn, and wonderfully garnished.

DECISION AT DOONA

By Anne McCaffrey • Ballantine Books • No. 01576 • 246 pp. 75¢

This is no "Dragonflight," but it introduces an alien race almost as endearing as the Dragons and it offers a timely parable of coexistence.

Earth is horribly overcrowded; a rat cage in a badly run high school laboratory is less likely to send its inmates clawing up the walls. Mankind is cautiously groping out among the stars, haunted by the guilt of having sent one alien and unstable race into mass suicide. There is a hard rule: men will not be allowed to settle on any world with an intelligent population of its own. But when the scouts bring back their reports of the world called Doona, there is no evidence of any prior native race beyond the predator level. So a small colony of specially trained and more than slightly claustrophobic men are sent to winter on Doona and prepare a colony to which their wives, their children and a few relict livestock will be brought in the spring if all goes well.

Then they find a village of Hrrubans—intelligent, friendly, humanoid cats. What they don't know is that the Hrrubans have a law of their own against cohabitation with any competing race.

So two advanced, crowded, intelligent, bureaucratically ruled races meet on a pleasant but occasionally dangerous world. They can and do live happily and cooperatively together—until law and principle get in their way. Fortunately, there is a catalyst in the human camp in the person of one intelligent six-year-old maverick with the spirit of the frontier in his blood and bones. Young Todd Reeve has no intention of being hampered by the stuffy and stupid conventions of an adult world whose rules and values he rejects.

Then the bureaucrats move in, and an impossible situation grows worse, for the Hrrubans can disappear. (This, by the way, is one point that bothers me. I can't believe that, matter transport or no, an entire village can be removed and leave no physical trace of its having been there. Footprints in the dust, broken twigs of plants used for food and medicine, paths through the forest . . . uh uh.) And they do. Fortunately, there are some wise and skillful politicians on both sides . . .

You've read the "Dragon Riders" stories and her other stories here. Whyever would you want to pass up anything Anne McCaffrey writes?

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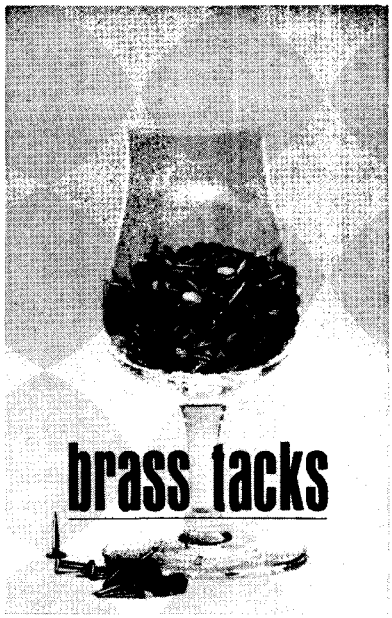

Dear Sir:

A solution to the spacesuit problem, in the form of a non-compliant form-fitting suit, has long been recognized. If I remember correctly the first publication of the concept can be attributed to Dr. Barach and his co-workers, Columbia University, resulting from their physiological research done during World War II. The first suit of this sort was developed by Dr. J. P. Henry, University of Southern California, based on a technical proposal by Dr. Lamport, University of Virginia, for an anti-G suit. (I may not correctly recall the parent organizations of these people).

By 1950 the suit, labeled T-1, was perfected to the degree that it was in routine use in experimental aircraft such as the X-1 and this suit remained the only practical altitude suit for some years. The design had been selected to avoid the difficulties of donning and doffing and heat dissipation you mention. The full pressure suit, a divers' type garment, succeeded it only recently. Over the years a team of physicians, physiologists and engineers at Wright Field contributed, as did Berger Bros. Co., New Haven, Connecticut, and David Clark, Co., Worcester, Massachusetts. The revival of the concept is due largely to Dr. Paul Webb, Webb Associates, Yellow Springs, Ohio.

The problem is somewhat different than you describe. The gas-tight character of human skin is of little consequence. The problem results from the compliance of the human skin, and the disruption of the pressure-volume relations of the thorax and the vasculature within, when the human being breathes pressurized gas. The result is circulatory failure and loss of consciousness. The dissipation of metabolic heat is secondary to this. The practical problem revolves about the inadequacy of technology to produce a fabric which is non-compliant beyond certain limits but which is also perfectly elastic within certain limits, as well as to construct an easily removable garment.

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A practical solution to the heat dissipation difficulties in full-pressure suit is to program work so that heat production does not exceed the capabilities of the system. The problem is not as you imply one of failure to recognize the proper concept but rather the inability of technology to provide adequate hardware.

WILLIAM C. KAUFMAN, PHD.
USPHS Fellow
National Institute for
Medical Research,
Holly Hill, London. N.W.3.
England

The human evaporative cooling system—with full automatic control!—solved that heat dissipation problem ages ago. Just let it work!

Dear Mr. Campbell:

Your recent editorial—"The Simple Way," June 1969 was extremely interesting, particularly as to the space leotard you described. However, a snag becomes apparent when you think about it: the extremes of temperature found in a vacuum.

Since the leotard permits heat to go one way, it also goes the other. In the dark side of the moon, for example, the astronaut might well freeze to death, since all his body-heat would be radiating out.

Another problem is that of sunlight. If he was working on the sunny side of the moon, our astronaut might be roasted to death and, worse, the plastic might melt about him. Thus, we would have prepackaged, par-boiled astronaut. Scratch one astronaut.

I don't know how you would solve the problem; perhaps you would silver the leotard on one side. Wouldn't that stop the sweat evaporating, though? Oh, well . . .

Other than that, I thought it's an excellent—and slightly humiliating—example of the simple way.

CRAIG HANSEN
1437 Aalapapa Dr.
Kailua, Hi. 96734

1. Leotards don't have to be black!

2. Since cooling would depend on evaporation, requiring no convections in space, this leotard could be covered *with an aluminum foil radiation protection—so long as that wasn't gas-tight!*

Dear Mr. Campbell:

Mr. Gaston should consult his local fire department about sweaters killing people. It seems to me that a few years back there were some synthetic materials used which made appealing soft and fluffy sweaters, which went up like celluloid collars when touched by flame. Inhaling flames is definitely bad for the health. Firemen see a hell of a lot of things they wish they could prevent, and trying to

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keep dangerous things off the market isn't easy. Some synthetics generate static. Now and then some otherwise bright person dry-cleans such fabric at home with gasoline.

The main trouble with the death penalty is that it should only be applied where guilt is 100% certain and the person is of no further use to society. England's Bloody Code did get altered, not so much because of one eight-year-old child being hanged (the U.S.S.R. still has one on the books permitting death for twelve-year-olds, and the Nazis ran thousands of children through their death plants, but the fact that too often the punishment did not fit the crime. People who innocently passed counterfeit pounds died speedily. An English artist who saw a row of these unfortunate dupes swinging for someone else's dirty work drew up a satirical pound note which changed that part, and other people got the rest changed.

It is the desire to kill that makes almost any instrument a weapon. Note that case in a neighboring state where two children set fire to their house to get even with Pa for not liking Sis's boyfriend. Ten dead. This may not have been a case where the girl wanted to see the whole family die, but that is how it came out. What is an adequate punishment? If she has a conscience, the law need not be too heavy on her, as she will remember that the rest of her life. She may, of course, be the sort who won't. Such people are why laws are needed in the first place.

Possibly some form of Heinlein's "Coventry" would work. But where, and how? One student of crime thinks he can spot the real baddies by their reaction to people approaching them. Maybe so. There are people who enjoy hurting, others who enjoy being hurt. How do you take care of them? Like the Gilbert and Sullivan verse, the punishment should fit the crime. It takes a lot of ingenuity to do it right. Some places can't manage it at all.

It is said that Ethiopia once had a system where murder was punished by fines, or execution the same way as the deed was done, by relatives of the victim. Once this got a bit fouled up. The relatives yearned for blood, but had to take money. None of them would risk climbing a tree and falling onto the culprit as he passed below on a camel. But who's perfect?

JOHN P. CONLON
52 Columbia Street
Newark, Ohio 43055

And one of the best possible punishments is that bit about "let each prisoner pent, unwillingly represent, a source of innocent merriment!"

Dear Mr. Campbell:

In regard to your article "The Simple Way" in the June issue, I would like to pose a couple

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of questions about the space leotard. First, what about the so-called Bends that skin divers experience as a result of too rapid decompression? And the reverse, nitrogen narcosis, the "rapture of the deep" which is a result of bubbles of nitrogen being dissolved into the bloodstream due to too great a pressure, which users of the space leotard for EVA might encounter on re-entering the spacecraft. This might be avoided easily enough by using a helium-oxygen mixture instead of nitrogen-oxygen, but still needs to be reckoned with.

Secondly, the idea is lovely on paper, but who is going to be the first to test it in hard vacuum?

WILLIAM C. FRANCIS
51 N. Koenigheim Street
San Angelo, Texas

1. To date, NASA is using pure O_2 atmosphere in space capsules. No. bends.

2. When they figure out how to put one on they'll be ready to try it in vacuum!

Dear John:

Recently a friend of mine got mad at me because he wrongly believed that I had written something about S-F which was offensive to him.

I am John R. (Robinson) Pierce, sometimes J. J. Coupling, and once John Roberts. I love all editors, especially those who publish my stories. I love all S-F writers, more or less, according to sex, talent, my ability to understand their stories, and how well I know them. I love all critics; although few have said anything about me, what has been said has been generally complimentary. And, of course, I love all fans.

I am *not* John J. Pierce; I have *not* written against the new wave. I have *not* written critically about individual writers or editors. I am *not* the founder of the Second Foundation. I am *not* now either criticizing or praising what John J. Pierce has written. I just want to make clear that he is *not*

J. R. PIERCE
16 Roberts Road
Warren, N. J. 07060

Given 200,000,000 people in a nation speaking one language, duplication of names—complete duplication even!—is almost certain.

Dear Mr. Campbell:

Re Mr. Borky's letter in ASF/SF for May, 1969, I would like to ask just one question: Exactly what is it about a registered gun that would make it less likely than an unregistered one to be (a) used in a crime of passion; (b) used in a holdup; or (c) stolen and used in any other crime?

Being registered, *per se*, makes a gun liable to only one thing: confiscation. So that if—God forbid—we ever have a dictatorship in this country, or are occupied by a foreign power, two guesses as to

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the use that registered-gun lists would be put to. (It's already happened in Cuba and Czechoslovakia, to name just two.)

Even the relatively mild Federal gun laws that we now are subject to have had, to my own observation, some interesting effects locally. Since these laws went into effect, two shops in the nearby community of Verona have been robbed and burned. One was a sporting-goods shop (contents obvious); the other was a Civil War relics shop that carried guns of all vintages as well as the usual uniforms, minie-balls, et cetera. One may draw his own conclusions . . .

Well, enough said on that subject. Now a quickie on Mr. Austin's excellent letter about the variability of brand merchandise . . . My wife and I have had a sort of "Family proverb" for many years: "You can never get a good thing twice." Now I know why.

CHARLES H. CHANDLER
311 North New Street
Staunton, Va. 24401

It might help reduce use of properly registered guns in hold-ups. But I doubt that properly registered guns—or properly owned and registered cars—are so used anyway.

As to variability of merchandise—how about your own variability confounding confusion? There are times I loathe the idea of fish—and others when that's what I want!

Dear Mr. Campbell:

Your editorial in the July Analog makes several excellent points, but you seem to have missed one aspect. I've also read that heavy smokers in non-polluted atmospheres have a lower incidence of lung cancer than non-smokers in our urban areas. But two wrongs don't make a right: if polluted air is dangerous, why increase the danger by smoking? Surely you don't mean to suggest that there is *no* relation to cigarette smoking and lung cancer, whether nicotine or something else is the culprit.

You also say that there is no popular movement to stop cigarette smoking. I think the excellent "commercials" I've been seeing, sponsored by the anti-cancer and anti-heart disease factions, are reaching even the anti-intellectuals.

A final word, to prove that I'm not anti-Campbell entirely: the rest of the editorial did make good sense, and I've been an Analog fan since high school.

KAREN TREG (MRS.)
2985 Techny Road
Northbrook,
Illinois 60062

1. Two wrongs don't make a right—but claiming that one of two factors is THE villain, while ignoring the other is itself a wrong!

2. A heavily subsidized propaganda campaign does NOT constitute a "popular movement." It would not be necessary if there were a truly popular movement!

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EDITORIAL

continued from page 7

These men are called "Statisticians," and they've arranged it by defining "normal" in such a way that, no matter what the absolute level of anything may be, one half of the total number of instances must lie below "normal" and one half above. If everyone in the nation suddenly increased in IQ by 150 points—moving the lowest idiot above high-genius—one half of our children still would be subnormal. And that's in the Nature of Things; by definition you can't change that.

2. And that, of course, depends on the biological fact that, with respect to any nameable or measurable characteristic, any and all biological species show a distribution curve. Whether it's inches of height, kilograms of mass, or ability to solve problems—there's a distribution curve. As the Bible correctly states, "The poor we have always with us." And we always will—until Man is replaced by identical-duplicate robots. And then *they'll* have a distribution curve too, because no duplication process can be absolutely noise-free.

We will have the poor in spirit, the poor in health, the poor in ability. And that's a matter of the Nature of Things we can't change.

If human beings insist on trying to bring about a situation contrary to the Nature of Things, you can bet that a vast amount of time, effort and money will be sunk in projects inherently doomed to failure. So long as the Nature of Things has decreed a distribution curve, you can not, ever, make all men come out equal.

You'll get further recognizing that individuals are *not* equal—and their exact place on the distribution curve is *not* predetermined by ancestry. The only visual clue that is relevant is that skin-color bears a strong correlation with at-the-moment melanin content of the skin. This is of great importance to a photographer, or a suntan lotion salesman, but in all other respects it tends to be pretty meaningless.

The fact that a lot of falsely based judgments of competence have been made does *not*—repeat strongly, *not*—have anything whatever to do with the fact that there are proper and necessary judgments of competence.

The great effort to help the poor would *not* be helped by diverting money (which simply means human scientific efforts) from great research programs, unless that effort was diverted to the one most cordially hated area possible—methods of determining accurately and meaningfully the potentials of individual human beings. I.e., of separating the Superior from the Inferior on a sound, rational, absolutely unbiased basis.

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Nothing could be more cordially hated—and nothing could do more to improve the lot of all men.

The thing that can be accepted without the horrendous emotional rebellion such a program would produce, is a program that advances all Mankind physically—and *that* type of program means spending human effort on physical science, not on crackpot sociological schemes that seek to deny the fundamental Nature of Things.

When we, today, talk about "ill-housed, ill-clothed, and ill-fed" people, we're talking in terms of the highest standard of living humankind has ever known. If we take the sweep of human history into account, "housing" must include hide tents, natural caves, lean-to shelters, and spots under overhanging banks. "Ill-clothed" is interesting, too; the Tierra del Fuego Indians, who lived in a climate about like that of Scotland, Massachusetts or northern Japan, didn't have any clothes, nor any housing. Darwin reported seeing a naked mother giving birth to a baby in a sleet storm, with the midwife brushing the congealing sleet off of the newborn baby. What's your absolute standard of "ill-clothed" so we can measure it in a non-relative manner?

"Ill-fed?" That's fascinating, too. They talk about hunger in the United States. Let's see, there are plenty of insects around, and fried grasshoppers, for instance, are considered pretty good by a number of peoples. The Australian aborigines find nourishment by overturning rocks and logs. Few people today realize that "Give us this day our daily bread," meant just that—they considered themselves fortunate to have a little bread, without expecting their daily meat, vegetables, and properly prepared and canned or frozen foods.

The advances in human conditions have come about through research efforts expended toward gaining more knowledge of our physical universe—and to take away from that immensely successful and fruitful endeavor, to support a fuzzy-minded ideal of "what ought to be" that's actually in direct conflict with the Nature of Things is, while it may be marvelously idealistic, about as stupid as we could get.

If the sociologists want money to amuse themselves and test their theories with, I suggest they get a law whereby each individual's annual expenditure for liquor is determined, and he is then taxed that amount, while the liquor industry is discontinued, thus making available huge amounts of food and money.

That wouldn't harm human progress appreciably, and would be a damn sight more sensible than discontinuing human progress and physical science research.

The Editor.

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Marion Lafayette
2711 Carter Drive
Ann Arbor, Mich.

Mr. & Mrs. D.C. Lafayette
10-15 Westport Road
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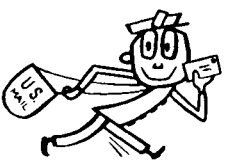

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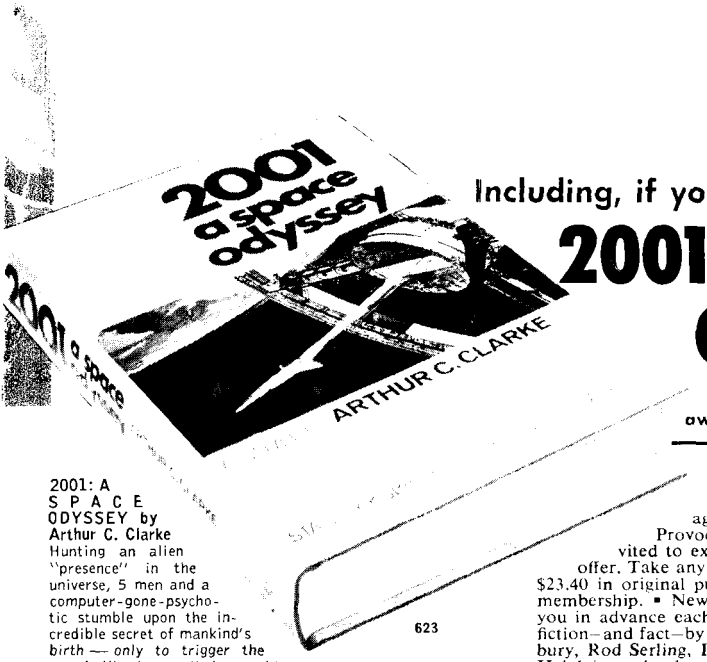

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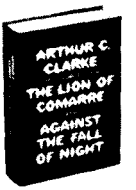

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